

**The Interpretive Spiral:
An Analytical Rubric for Videogame Interpretation**

A Thesis
Presented to
The Academic Faculty

By

Robert Henry Whitson III

In Partial Fulfillment
of the Requirements for the Degree
Masters of Science in Digital Media

School of Literature, Communication and Culture
Georgia Institute of Technology

May, 2012

**The Interpretive Spiral:
An Analytical Rubric for Videogame Interpretation**

Approved by:

Dr. Ian Bogost, Thesis Chair
School of Literature, Communication and Culture
Georgia Institute of Technology

Dr. Celia Pearce
School of Literature, Communication and Culture
Georgia Institute of Technology

Dr. Janet Murray
School of Literature, Communication and Culture
Georgia Institute of Technology

Dr. Elizabeth Losh
Sixth College
University of California at San Diego

Date Approved:
03/30/2012

Dedication

For Grace, for staying close even when I was far away, and coming closer whenever I needed you most. And for Mom and Dad for encouraging me to go to grad school and still being proud when I decided to study *Mario*.

Acknowledgements

This thesis would not exist without the constant love, support and reassurance of the people in my dedication. My model would not be half as coherent, useful or interesting with the insightful guidance and incisive questions from my committee chair, Ian Bogost. I am also extremely grateful for the useful and interesting suggestions from my other committee members, Celia Pearce, Janet Murray, and Liz Losh. Thanks to Bobby Schweizer for giving up his Gameboy color and copy of *Tetris* so I could replay and study the superlative incarnation of the game. Thanks to Mariam Asad for the invaluable advice on time management early on and the vote of confidence. Further thanks to Travis Gasque, Nic Watson, Patrick Coursey, Chris DeLeon, Colton Spross, Allan Martell, Chris Sumsy, and everybody at *The Technique* for the conversations, humor and general camaraderie that kept me (mostly) sane. Finally, thank you to Jon, Ereich, Rob, Ruby, Jason, Mary, Mark, Brian, Khoi, Mike and Marissa for all the game's we've played together, and letting me know I was missed in California.

Table of Contents

Acknowledgements	IV
List of Figures	VI
Summary	VII
Chapter 1: Introduction: Play as a Spiral	1
Chapter 2: The Interpretive Spiral	
A Rubric for Analyzing Videogame Interpretation.....	8
Terminology and Processes.....	11
Useful Practices.....	23
Chapter 3: <i>Mario 64</i>, Skills and Literacy	
Introduction to Ludic Literacy.....	27
A New Dimension.....	31
‘Reading’ <i>Banjo-Kazooie</i> by way of <i>Mario 64</i>	51
Chapter 4: <i>Tetris</i>, Abstraction and Thematic Interpretation	
Introduction to Abstraction and Abstract Games.....	59
From Russia with Fun.....	60
Abstraction and <i>DOOM</i>	74
Chapter 5: <i>Braid</i>, Metaphor and Alternate Interpretations	
Introduction to Metaphorical Play.....	82
Other Castles.....	84
Metaphorical Patterns and the Promise of Misreadings.....	93
<i>Braid</i> as a Craftsman Videogame.....	103
Speed-Runs, Constraint Play and Achievements.....	107
<i>Braid</i> ’s Stars: Interpreting Secrets.....	112
Chapter 6: Testing the Spiral	
On Subversive and Emergent Play.....	116
In Comparison to MDA Framework.....	120
Chapter 7: Applications and Conclusions	
The Spiral in Review.....	126
Hacking the Spiral: Future Applications.....	128
Ludography	131
Bibliography	133

List of Figures

Figure 1.1: Arsenault and Perron’s Magic Cycle.....	3
Figure 2.1: The Interpretive Spiral: Categorical Structure.....	10
Figure 2.2: The Interpretive Spiral: Pre-play Level Process Loop.....	13
Figure 2.3: The Interpretive Spiral: Fundamental Level Process Loop.....	15
Figure 2.4: The Interpretive Spiral: Secondary Level Process Loop.....	18
Figure 2.5: The Interpretive Spiral: Tertiary Level Process Loop.....	20
Figure 3.1: Box art for the North American release of <i>Super Mario 64</i>	31
Figure 3.2: Figure 3.2: Super Mario World Over World Map.....	37
Figure 3.3: North American box-art for the Nintendo 64 release of Banjo-Kazooie.....	51
Figure 4.1: Tetris’ Game Boy Box Art.....	62
Figure 4.2: Tetris’ Naïve Gravity Mechanic in Action.....	64
Figure 4.3: All Tetrominoes from Tetris Game Boy.....	70
Figure 5.1: Braid’s Sale Page on Steam.....	85
Figure 5.2: Braid’s Secret Star Constellation.....	113

Summary

In this work, I propose an analytical rubric called the Interpretive Spiral designed to examine the process through which players create meaning in videogames, by examining their composition in three categories, across four levels of interaction.

The most familiar of the categories I propose is the Mechanical, which refers to the rules, logic, software and hardware that composes the core of videogames. My second category, which I call the Thematic, is a combination of Arsenault and Perron's Narrative Spiral of gameplay, proposed in their Magic Cycle of Gameplay model (accounting for embedded text, videos, dialog and voiceovers) and Jason Begy's audio-visual level of his Tripartite Model of gameplay (accounting for graphics, sound effects, music and icons), though it also accounts for oft-neglected features such as interface and menu design. The third category, the Affective, refers to the emotional response and metaphorical parallels inspired by the combination of the other two levels.

The first level of interaction I explore actually precedes gameplay, as it is common for players to begin interpreting games before playing them, and is called the Pre-Play Level of interpretation. Next I examine the Fundamental Level of interpretation, which entails the learning phase of gameplay. The Secondary Level of gameplay is the longest level of play and describes the shift from learning the game to informed, self-conscious play. The Third and final, elective level of interpretation, is where the player forms connections between his gameplay experience, and other concepts and experiences that exist outside of the game artifact.

To put my model through its paces, I apply the model in its entirety to three influential and critically acclaimed videogames, and in part to several other titles.

Chapter 1: Introduction: Play as a Spiral

In 1949, Johan Huizinga likened the process of gameplay to a, “Magic Circle” in his book, *Homo Ludens*. Huizinga’s first mention of the circle (p. 10) is also the most often-cited by videogame scholars (Woodford, 2007; Salen & Zimmerman, 2003):

More striking even than the limitations as to time is the limitation as to space. All play moves and has its being within a play-ground marked off beforehand either materially or ideally, deliberately or as a matter of course. Just as there is no formal difference between play and ritual, so the "consecrated spot" cannot be formally distinguished from the play-ground. The arena, the card-table, the magic circle, the temple, the stage, the screen, the tennis court, the court of justice, etc., are all in form and function play-grounds, i.e. forbidden spots, isolated, hedged round, hallowed, within which special rules obtain. All are temporary worlds within the ordinary world, dedicated to the performance of an act apart.

Huizinga aligns gameplay with ritual experience, and ascribes a transformative value to the area of play, which is inextricable from the process of play. Things inside of the play area—whether they are people, objects, or terrain—gain special properties that do not apply to life as usual.

Katie Salen and Eric Zimmerman are credited for popularizing the term in their influential book on game design, *Rules of Play* (P. 96, 2003). In “Jerked Around by the Magic Circle - Clearing the Air Ten Years Later,” Eric Zimmerman writes that iconoclastic videogame scholars and grad students frequently use Huizinga’s Magic Circle as a target. Papers have called for the circle to be “abandoned” (Woodford, 2007), and “dissolved” (Schleiner, 2010) and in 2008, an entire conference devoted to “breaking the magic circle” was held in Tampere, Finland. Zimmerman writes the general thrust of these arguments is as follows: the magic circle imposes an artificial and rigid structure to game design that neglects or ignores the social and political aspects of gameplay. He argues the purported dangers of the circle refer to an imagined adversary of good game design, a Magic Circle Jerk (Zimmerman, 2012).

In defense of the circle's inclusion in *Rules of Play*, Zimmerman states (Zimmerman, 2012) "It is a term that reminds us how meaning happens" and that games "are a context from which meaning can emerge." If game scholars and game designers use the 'Magic Circle' as a metaphor for an ongoing process of meaning-making, rather than a formalist barrier designed to divorce gameplay from society and politics, it can serve as a useful concept for designers, then the question arises, "What meaning does the context created by our game give rise to?"

In their essay, *In the Frame of the Magic Cycle*, Dominic Arsenault and Bernard Perron state that notions of circularity persist in videogame study and analysis citing Chris Crawford's cyclical definition of interactivity (Crawford, 2003) and Daniel Cook's concept of skill atoms (Cook, 2007). They suggest that these circular approaches to understanding videogame play stem from "one point on which everyone agrees: playing a videogame is always a continuous loop between the gamer's input and the game's out-put." Using this continuous loop between game system and game player as a foundation, Arsenault and Perron propose a model of nested spirals that charts a player's involvement and interpretation of videogames (see figure 1.1).

This cycle model offers several valuable insights. As a metaphor, it addresses the structural shortcomings of the circle, such as the lack of an entry point. The ever-expanding shape of the spiral itself is an accurate spatial metaphor for interpretation as a whole, with the interpreter's understanding of an artifact expanding ever-outward from the artifact itself, while probing 'deeper' into its contents. Finally, the looping nature of the spiral accurately captures the circular repetition of gameplay and allows for a visual representation of refinement. Arsenault and Perron's model is also praiseworthy for recognizing players' capacity and inclination to begin interpreting games even before they begin playing them through anticipation. Finally,

recognizing gameplay as the fundamental process of meaning-making from which narrative and holistic comprehension arise is also insightful and accurate.

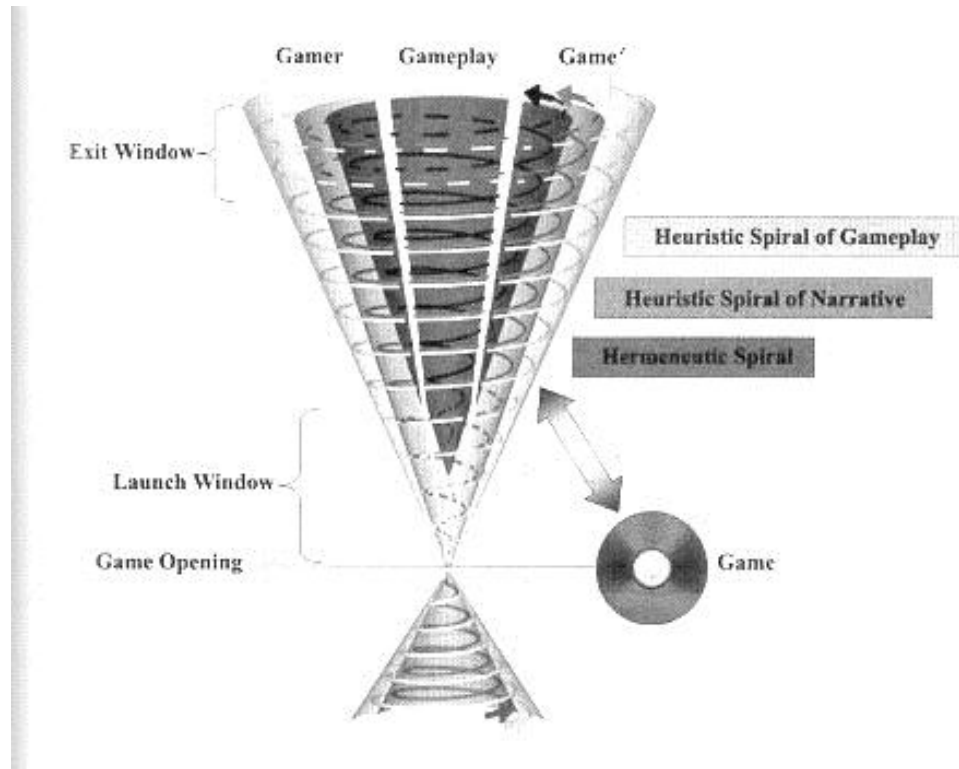


Figure 1.1: Arsenault and Perron's Magic Cycle

Arsenault and Perron's model is not perfect, however. They admit that the narrative spiral does not account for abstract games like *Tetris*, and attempt to excuse this by stating "most games rely on some kind of narrative" (p. 116). While this may be true, it can be misunderstood as dismissal of abstract games as anomalies. It is also a significant missed opportunity for analysis. It not only ignores the aesthetic significance of the lack of narrative in abstract titles, it ignores the non-narrative audiovisual and paratextual elements in *all* games. The design of game menus, sound effects that are not laden with narrative meaning (like the constant, maddening pinging that signifies low health in *Zelda* titles) all contribute to the interpretive process. Any

model that aims to provide a comprehensive analysis of videogames must explicitly account for these factors of game design, or risk producing flagrantly incomplete or incorrect interpretations.

To supplement and improve their Magic Cycle model, I have turned to Jason Begy's Tripartite Model of Games, which he presents in his thesis, *Interpreting Abstract Games: The Metaphorical Potential of Formal Game Elements*. Although Begy intended his tripartite critical model to be used for examining abstract games, it is broad and flexible enough to be usefully applied to all videogames. In addition to accounting for narrative elements, Begy's Audiovisual category accounts for music, sound effects graphical representation, and supplementary "paratextual" materials such as game manuals and box-art (Begy, 2010, p.35). This category was the bases for my own Thematic category. My model also accounts for the aesthetic implications of how the title structures progress. A game with a sprawling world, like *Red Dead Redemption*, may remind players of a travelogue, whereas a title heavily mediated by menus, like the research and development aspects of *Valkyria Chronicles*, might remind players of a day at the office. Furthermore, a title with a fixed screen and moving game objects, like *Tetris*, may evoke a "retro-gaming" aesthetic, if they have experience with other fixed-screen games from the Atari or arcades. Similar to the way chapter lengths and word placement can influence reader's experience, the organization of progress and game objects on a screen will influence interpretation.

I have also improved on Arsenault and Perron's model by mapping the different types of thought processes players experience while playing a game. While their four step feedback loop accurately describes the repeated activities that occur throughout gameplay, it does not provide any analysis of how a gamer's involvement with a title changes over time. By dividing the Interpretive Spiral into four temporal levels of involvement, my model can offer an account of

these evolving relationships. Admittedly, this results in a much more complicated model, and it requires the interpreter to navigate an extra dimension of subjectivity. The distinction between the Secondary and Tertiary Levels of play are more ambiguous than the distinction between the pre-play and gameplay dimensions of the spiral. They are meaningful though, as the player behaves differently when he is first learning how to play the game, and when he is purposefully interpreting the game by forming connections with external experiences.

I refer to my final category of analysis as the Affective, which I use to refer to the player's metaphorical realization as well as his emotional response to the game. This category was influenced by Arsenault and Perron's 'Hermeneutic Spiral,' and Jason Begy's own Affective category, but it was also influenced by the principles of Ian Bogost's comparative videogame criticism, first proposed in his article "Comparative Videogame Criticism," and later discussed at length in his book *Unit Operations*. In the article, Bogost responds to Espen Aarseth's influential book on interactive literature, *Cybertext: Perspectives on Ergodic Literature*. In *Cybertext*, Aarseth asserts "To claim that there is no difference between games and narratives is to ignore essential qualities of both categories. And yet, as this study tries to show, the difference is not clear-cut, and there is significant overlap between the two." (p. 3). In response, Bogost observes that Aarseth proposes video game studies make a break with the conventions of literary criticism despite acknowledging their overlap. Bogost feels this is missed opportunity, and points out "...those artifacts left out by Aarseth's (1997) cybertext: Poetry, film, literature that are not obviously made configurative by the reader may likewise be done so by the critic." (p. 5). I believe Bogost is right about criticism being a configurative process and I present this model as one of many possible ways to explain how comparative videogame criticism is a configurative process.

I realize that comparative literature scholars, and contemporary scholarship in general, have grown weary and wary of formal approaches to analysis. After examining the “ludology vs. narratology” argument that preoccupied videogame scholarship for nearly a decade, such skepticism is not only understandable, but prudent. In his position paper “You Played That? Game Studies Meets Game Criticism,” Bogost points out “both ludological and narratological approaches pose questions of form, not of content” (Bogost, 2009). This formalist slant led game scholars to spend an exorbitant amount of time trying to taxonomize videogames as a medium, rather than analyzing the actual content of videogame artifacts. Worse yet, the uniquely political climate of the debate saw ludologists fighting narratologists for research funding and academic legitimacy, leading to the unproductive and ultimately untenable attempts to exclusively claim videogames as ludic or narrative artifacts.

Just as Zimmerman and Salen did not mean to present the Magic Circle as a means of circumscribing play, it is not my intention to contain, constrain, or label videogames with my Spiral. Rather, the model I am presenting is a conceptual tool in a similar to their Circle in *Rules of Play*. It is also comparable to Marshal McLuhan’s Media Tetrad in *Laws of Media*, as a structured approach to analysis that enables its users to examine specific parts of a concept. But where McLuhan famously focused on the properties of human media at the provocative exclusion of content (“The medium is the message”), my model is explicitly designed to examine the content of individual artifacts. Like McLuhan’s Tetrad, my spiral can yield multiple meanings when applied to the same artifact with different intentions and perspectives. It is a tool for game designers, scholars and journalists.

To demonstrate my model’s viability and utility, I apply it to three ground-breaking titles in detail. First, I examine *Mario 64* which ushered in a new paradigm of spatial navigation to the

videogame medium. Second, I examine *Tetris*, the most well-known abstract videogame in the world. Finally, I examine *Braid*, an independently developed videogame developed with explicitly metaphorical mechanics. These titles were chosen because they are each very different from each other, but all extremely important examples of what videogames are capable of as a medium.

Chapter 2: The Interpretive Spiral

2.1 A Rubric for Analyzing Videogame Interpretation

The Interpretive Spiral is a rubric to analyze the interpretive process in videogames. My model divides the game being analyzed into three inter-related categories: The Mechanic, The Thematic and The Affective. It also analyzes player interaction at four different levels of interaction: Pre-play, Fundamental Play, Secondary Play, and Tertiary play. It is designed to analyze the sort of interpretations that are inspired by videogame artifacts themselves, as opposed to the biases and experiences carried by individual players.

The greatest challenge to analyzing the interpretive process is that interpretation is an inherently subjective practice. Two people applying the spiral to the same game will most likely produce slightly different results, particularly in the Affective Category, and at the Tertiary Level of play, which are both defined by metaphor-making. That said, each videogame, regardless of its complexity, has certain foundational features that will structure the play and interpretation of every player who interacts with it. *Civilization V* for example, is a game with multiple victory conditions that can be played in a multitude of different ways, but every type of play will involve common elements; such as building cities, negotiating with other civilizations and upgrading units and technology. Each unique type of play also utilizes the same graphical engine, textures, music and menu styles. Comprehensive interpretations of the game, which is to say interpretations that account for the game's mechanics, thematic content, and the affects that they give rise to, will be shaped by those common factors.

As Arsenault and Perron observe (p.120), play occurs in an interactive loop between the game (including hardware and software) and the player. Arsenault and Perron propose a 4-step loop that describes user interaction:

1. From the game's database, the game's algorithm draws the 3-D objects and textures, and plays animations, sound files and finds everything else that it needs to represent the game state.
2. The game outputs these to the screen, speakers or other peripherals. The gamer uses his perceptual skills (bottom-up) to see, hear and/or feel what is happening.
3. The gamer analyzes the data at hand through his broader anterior knowledge (in top-down fashion) of narrative conventions, generic competence, gaming repertoire, etc. to make a decision.
4. The gamer uses his implementation skills (such as hand-eye coordination) to react to the game event, and the game recognizes this input and factors it into the change of the game state.

These steps are problematic for several reasons. The first two steps are at once too specific, (referring to 3-D models and textures excludes sprite-based games) and too broad ("everything else necessary to build the game state," "other peripherals,"). Furthermore, some of the steps seem to arbitrarily combine machine and player actions that occur sequentially rather than simultaneously. The most problematic feature of this 4 step loop however, is that it does not account for changes in players' behavior as they learn, master and interpret games. Players analyze data differently when they are learning the game as opposed to when they have played a title for the 200th time. My model features several different loops, with different actions occurring at different levels of involvement.

On the following page, I present a chart that provides a complete overview of the Interpretive Spiral. Italicized processes refer to actions taken by the player, while un-italicized terms represent actions performed by the game and the system.

The Interpretive Spiral (Overview)			
Category	Mechanic: Software (Code, Game Mode), Hardware (Platform Specs, Controller), Mechanics (Rules, Constants, Game Objects).	Thematic: Diegesis, Graphics (sprites, 3D models, textures), Narrative (text, cinema-scenes), Music, Sound Effects, Menu Design.	Affective: Emotional Response, Experiential Parallels, Dynamics, Gamé
Level of Interpretation			
Tertiary & Post-Play (Translation Phase)	Instantiation, <i>Prediction & Reaction</i> , Feedback, <i>Reflexive Evaluation & Comparison</i>	Instantiation, <i>Perception</i> , Feedback, <i>Reflection & Analysis</i>	Instantiation, <i>Prediction & Reaction</i> , Prescription, <i>Translation</i>
Secondary (Performance Phase)	Instantiation, <i>Assessment & Reaction</i> , Feedback, <i>Evaluation & Anticipation</i>	Instantiation, <i>Perception</i> , Feedback, <i>Evaluation & Anticipation</i>	Instantiation, <i>Assessment & Reaction</i> , Prescription, <i>Evaluation & Anticipation</i>
Fundamental (Learning Phase)	Instantiation, <i>Experimentation</i> , Feedback, <i>Evaluation & Anticipation</i>	Instantiation, <i>Perception</i> , Feedback, <i>Evaluation & Anticipation</i>	Instantiation, <i>Experimentation</i> , Prescription, <i>Evaluation & Anticipation</i>
Pre-play (Anticipatory Phase)	<i>Anticipation</i>	<i>Anticipation</i>	<i>Anticipation</i>

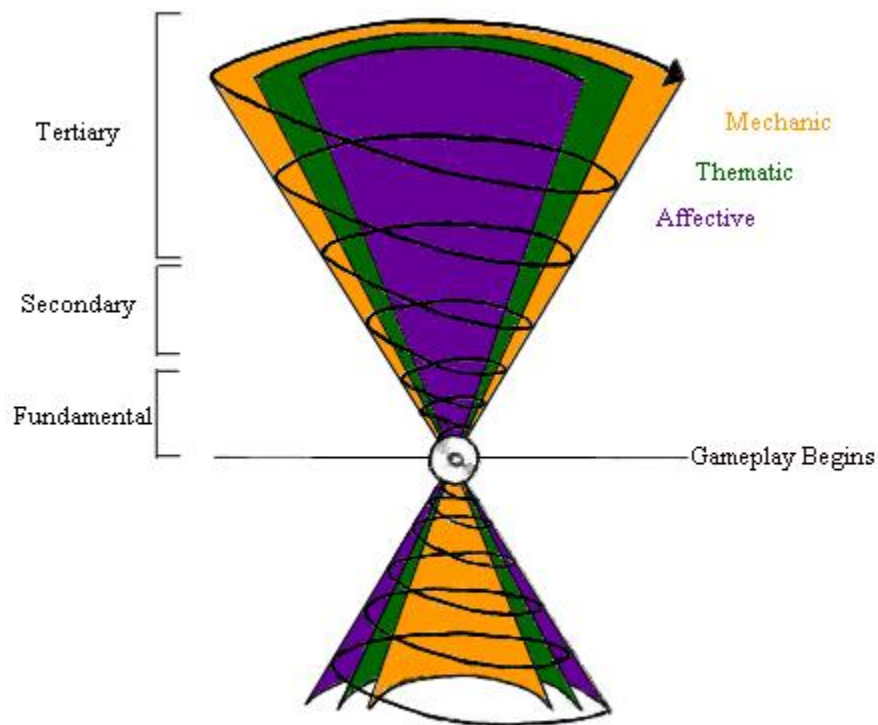


Figure 2.1: The Interpretive Spiral: Categorical Structure

Generally, the interpretive process flows through my model from left to right and from bottom to top. Again, recognizing the inherent subjectivity of interpretation and play, this is only a general guideline. Some processes, like the player's Perception of thematic content, and his Experimentation with the game's mechanics will occur (or at least appear to occur), simultaneously. There are also times where players will still be experimenting well into the Secondary Level of play. This is especially true of titles that introduce new mechanics and game object types as play progresses—a process I refer to as **Escalation**. Consequently, the divisions presented between each level and categories are relative as opposed to absolute.

I realize that the distinctions between these processes, particularly Assessment and Evaluation, may be initially confusing. Both are analytical processes that modify and structure a player's performance in game. Assessment, however, is a forward-thinking process used to understand the ludic implications of the current gamestate and strategize accordingly, in the sense of “assessing a situation.” Evaluation, by contrast, relies upon hindsight, and ascribes values to completed changes in the gamestate, answering questions like “Did I assess the situation correctly?” and “Did I accomplish my intended objective?”

In the following section, I define each of the processes and explain what they entail at each level of the interpretive spiral in greater detail.

2.2 Terminology and Processes

The three structural categories of games can be considered the foundation for my model. The general critical consensus among game designers (Hunicke, LeBlanc, Zubek 2004) and game researchers (Begy, Arsenualt and Perron) is that gameplay is the foundation of

experiencing games, and **Mechanics** are the foundation gameplay. Mechanics are comprised of computer code and algorithms in the game's software which are translated to the game screen by the game's hardware, or platform. I use the category Mechanics to discuss game objects (discrete, interactive objects that exist in the game world), essential game actions (running and jumping, shooting, camera control), purely ludic types of feedback (scoring, player death, spawning) and controls. In short, Mechanics are the machines, math, logic and rules that make gameplay possible.

The **Thematic** category of videogames describes the audiovisual and narrative elements of a game. Begy states that the audiovisual category of games encompasses "...All of the visual and audio aspects of a game, which include the game's fictional elements, as well as some non-diegetic and paratextual elements directly connected to the game." My Thematic layer also accounts for the narrative conventions and storytelling structures (chapters, levels) that shape the play experience and help establish experiential parallels to other activities beyond gameplay.

These parallel activities are recognized in the third structural category of games, which I borrow from Begy to refer to as the **Affective**. The emotional responses that are provoked by both Mechanics and Thematic content and the experiential parallels suggested or invoked by playing the game are all elements of the affective level. The content of the Affective Layer is actualized as player's mental maps of a game system. To describe these mental maps, or schemas, that are created during the interpretive process, I borrow Arsenault and Perron's term; **Gamé** which is to be read in the same way as the algebraic concept of prime. The Gamé is the mental model of a game system that exists in the player's mind. It does not only account for a game's mechanics, but also the ways that the game makes him feel. A Gamé is both a playbook for and a thematic interpretation of the game it is based on.

The first level of the Interpretive Spiral, which may be thought of as “level 0,” describes the interpretation that occurs before the player even begins playing the game. This **Pre-Play Level** is solely based on the player’s expectations which in turn, may be based on anything from promotional materials, to word of mouth, to expectations for future, as-of-yet non-existent installments in a game franchise. I may begin to anticipate *Resident Evil 7* by reading a review of a trailer of the forthcoming *Resident Evil 6*. Indeed, by writing that sentence, I have already started creating my Gamé for the currently non-existent (but inevitable) *Resident Evil 7*.

The Interpretive Spiral: Pre-Play Level		
Affective	Thematic	Mechanics
<i>Anticipation:</i> Player begins conceiving the emotional and experiential dynamics of a Gamé based on his prior experiences with the game.	<i>Anticipation:</i> Player begins conceiving the diegetic and aesthetic aspects of a Gamé based the game’s manual, promotional materials, prior installments of the franchise, etc.	<i>Anticipation:</i> Player begins conceiving the mechanical aspects of a Gamé based on the game’s platform, controller and prior installments of the franchise

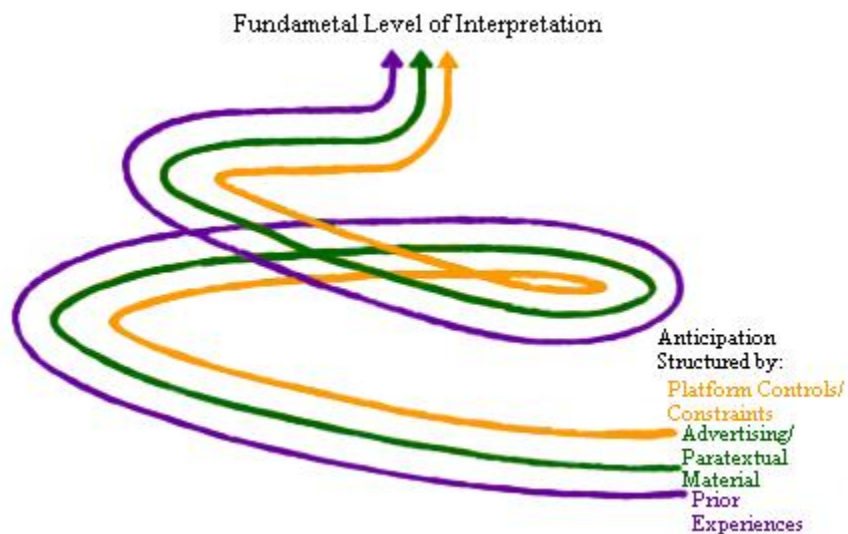


Figure 2.3: The Interpretive Spiral: Pre-play Level Process Loop

Interpretation begins with anticipation, and it can be considered the conclusion of each interpretive feedback loop, at each level of the spiral save for the last. It entails the creation of expectations, and the player's projection of those anticipations onto the game artifact. When old expectations are discarded in favor of new and or refined expectations, a single interpretive loop concludes.

It is important to note that the pre-play spiral progresses in an inverted fashion from the rest of the interpretive spiral. The player begins creating his Gamé by drawing from his own experiences, memories and emotional associations that are relevant to the title being interpreted. If he has played other games in the same genre or the same franchise his memories will provide the base of his speculative Gamé. As such, the affective layer envelops the preplay process, just as the mechanic layer envelops the Foundational, Secondary and Tertiary Levels of play. As the player consumes promotional material (commercials, posters, etc) and paratextual materials (game manual, maps of the game world) 'funnels' the player's Gamé toward the actual experience of videogame play by hinting at the game's content. Platform considerations, like platform's available control inputs and graphical capabilities narrow the player's expectations even further.

When gameplay begins, the mechanical encompasses all the other interpretive acts. The game's thematic content is accessed by participating in and altering the gamestate, and the game's affective content emerges from the combination of mechanics and thematic content. Instead of narrowing in on gameplay, the interpretive spiral begins to expand outward through gameplay. This change marks the beginning of the Fundamental Level of interpretation.

This level begins with the game process of **Instantiation**, which is the procedural generation of a game state. This process occurs in all three categories of the game simultaneously; the player is presented with game objects, the objects are “skinned” according to the diegesis, and their combination establishes an affect (tense, light-hearted, oppressive, humorous). This affect is fairly simple before the player begins to participate, but becomes increasingly complex as the spiral continues.

The Interpretive Spiral: Fundamental Level		
Mechanics	Thematic	Affective
<p>Instantiation: The game creates the game state according to rules and mechanics.</p> <p>Experimentation: The player reacts to the gamestate, identifying game objects and learning the rules and mechanics through experimentation.</p> <p>Feedback: The game registers the player’s actions and alters the gamestate accordingly. Escalation (modification of mechanics and/or introduction of new game objects) may occur where applicable.</p> <p>Evaluation & Anticipation: The player determines whether the game conformed to his expectations of the mechanics and modifies them accordingly.</p>	<p>Instantiation: The game creates its diegesis using audiovisuals, text, cut-scenes, etc.</p> <p>Perception: The player becomes accustomed to the graphical motifs, music, sound effects and explores the game’s diegesis. The player uses his various literacies to comprehend the game’s narrative (if applicable).</p> <p>Feedback: The game registers player’s actions and alters the diegesis accordingly. Narrative progress may occur, if applicable.</p> <p>Evaluation & Anticipation: The player determines whether his narrative expectations were met, and predicts what will happen next.</p>	<p>Instantiation: The game’s thematic content and mechanics invoke certain emotions and modes of thought.</p> <p>Experimentation: Curiosity for both the game system and the diegesis drive the player’s early progression through the game.</p> <p>Prescription: The game’s mechanical and Thematic feedback adds value to certain actions in gameplay.</p> <p>Evaluation & Anticipation: The player begins developing a mental model of the game, a or Gamé. This Gamé serves as a list of strategies, and a distinct interpretation of the game’s narrative and affect.</p>

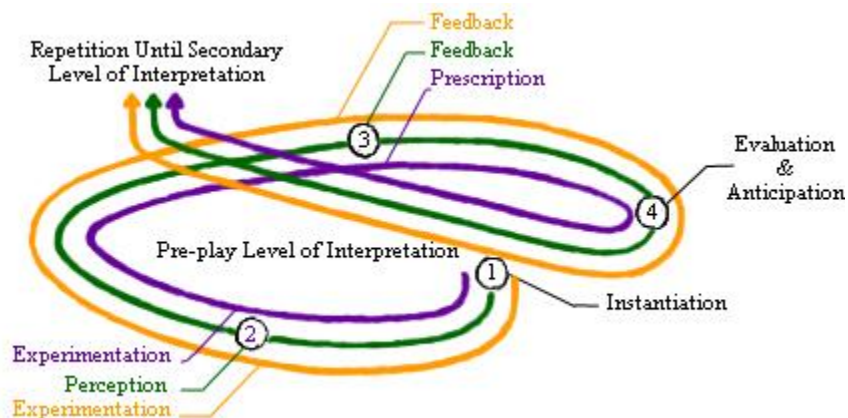


Figure 2.3: The Interpretive Spiral: Fundamental Level Process Loop

At the Fundamental Level of play, this participation entails to player processes:

Experimentation and **Perception**. Experimentation is exactly what it sounds like, and consists of the player testing the controls and game objects to see what effects he can inscribe on the gamestate. This process is informed, but not entirely structured by a player's capabilities to play the game, which I refer to as **Ludic Literacies**. Different videogame genres, which feature different control schemes and require different skills, require different literacies. Questions of interaction like "What does the A button do?" "What happens when I hit this object" and "How does the camera work?" are resolved through experimentation. Recognizing and comprehending Thematic content relies on a player's Perception, as opposed to experimentation. Again, this process is informed by the player's literacies (visual, textual, auditory), but not by his skills. Experimentation again occurs in the affective category, because at curiosity is guiding the act of meaning-making.

The computer answers the player's experimentation with **Feedback**. Ludic feedback may result in ludic changes like a restriction or modification of a player's available actions, or a change in score. Ludic feedback almost always results in new mechanical instantiation, but it may also be exclusively thematic. Pressing the button that honks a car horn in *Halo: Combat Evolved*, or *Grand Theft Auto III* for example, will not have any effect on the game objects that create the gamestate, but it will play a horn sound, deepening the player's conception of the game's diegesis.

In the affective category, the mechanic and thematic feedback coalesce in the game process of **Prescription**. The results of player actions prescribe certain behavior. There is a degree of subjectivity involved in Prescription. In *Grand Theft Auto III*, random acts of violence are both rewarded (with money) and penalized (by summoning law enforcement). Players who

simply want to play as anarchistic criminals are rewarded with money and the thrill of police pursuit. Players who want to see how the narrative progresses however, are prescribed to keep a lower profile, as they are unable to start new missions (which will reward them with new narrative content) while they are being pursued by police.

Prescription gives way to the final player processes in the fundamental loop: **Evaluation & Anticipation**. Evaluation entails a player reflecting on his experience of the game. Did the game behave as expected? Did the game's feedback suggest a value to the player's actions, by rewarding him or penalizing him? The answers to these questions inevitably shape the player's anticipation of future play, and the cycle will begin anew, either with Instantiation (if there was a change in the gamestate) or further Experimentation (if there was no noticeable change in the gamestate).

The transition from the Fundamental to the Secondary Level of Interpretation can be defined by the shift from experimentation to informed decision-making, which is **Assessment & Reaction**. New Instantiations will likely result in Escalation—the introduction of new mechanics and game objects. The player's developing Gamé will allow him to analyze these new features more accurately. If he has experimented with several different power-up game objects, he will likely recognize a new one and know how to react to it appropriately.

Perception remains constant in the thematic category, as no new skills or literacies are required to receive audiovisual content, though increased familiarity with the diegesis, narrative and theme will allow the player to **Evaluate & Anticipate** the game's narrative progression more accurately. Learning more about characters allows the player to predict their actions more accurately. Even if players are deceived, they have more narrative information to base their

opinions on. Predicting narrative behavior is more dependent on player's familiarity with various storytelling conventions than with their literacies or gameplay conventions.

The Interpretive Spiral: Secondary Level		
Mechanics	Thematic	Affective
<p>Instantiation: The game presents the player with a new gamestate, though Escalation likely occurs.</p> <p>Assessment & Reaction: The player's Gamé now allows him to make informed analyses and reactions to changes in the gamestate.</p> <p>Feedback: Same as above.</p> <p>Evaluation & Anticipation: The player recognizes specific dynamics that shape gameplay. He also learns to assess his own performance independent of the game's feedback.</p>	<p>Instantiation: The diegesis continues to grow and is fleshed out by new sounds, images and story.</p> <p>Perception: The player continues to explore the diegesis and narrative and becomes familiar with audiovisual motifs</p> <p>Feedback: Same as above, the narrative progress will almost inevitably occur (if the game features a narrative).</p> <p>Evaluation & Anticipation: The player has a more developed understanding of the story, allowing for more accurate predictions.</p>	<p>Instantiation: Changes to the gamestate and diegesis present the player with new affects</p> <p>Assessment & Reaction: The player encounters a wide range of situational dynamics caused by various combinations of the gamestate and diegesis.</p> <p>Prescription: The player is exposed to a wider variety of prescriptions, or existing prescriptions are imposed with greater specificity.</p> <p>Evaluation & Anticipation: The player's Gamé is sufficiently advanced to begin anticipating new gameplay experiences.</p>

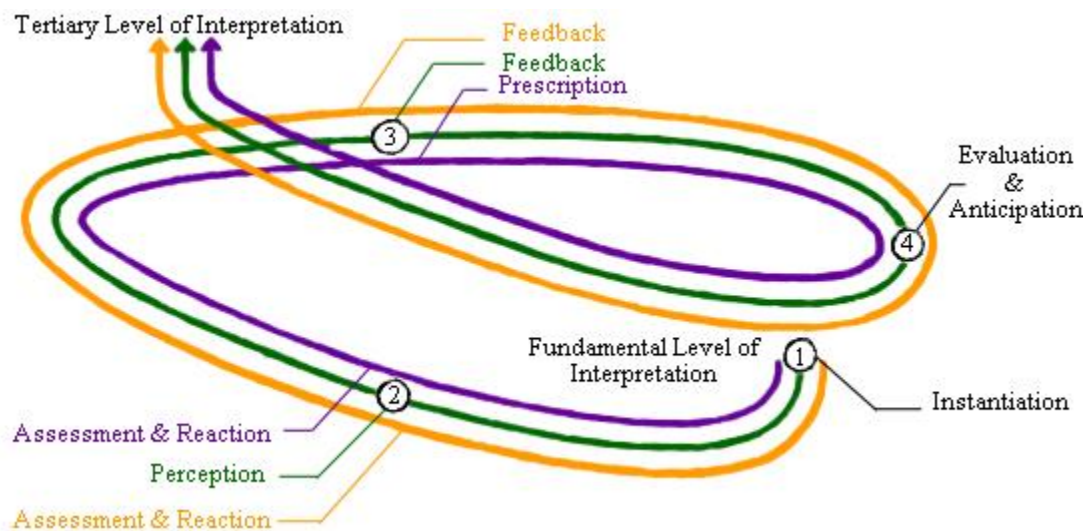


Figure 2.4: The Interpretive Spiral: Secondary Level Process Loop

Feedback, as a hard-coded process, remains consistent with the game's programming. Even if a tremendous deal of escalation occurs, offering a wide and disparate variety of experiences, "it is the game's space of possibility that expands, and not its design" (Arsenault

and Perron, 116). New **Prescriptions** do arise in the affective category based on the player's growing body of experience. While conforming to one prescribed course of behavior, the game's feedback may present a new enemy or obstacle that forces the player to reconsider his tactics. Or, a player may discover a more efficient way to pursue old prescriptions.

As the player's Gamé expands, so does his ability to **evaluate and anticipate** the game's mechanics. More significantly, the player begins to extend the evaluation process to his own performance. He begins to understand what constitutes "effective" play and recognizes his own mistakes more readily. He will also begin to purposefully, and self-consciously modify his Gamé to include specific tactics.

In the affective category, the player's Gamé becomes sufficiently advanced that he may begin to predict experiences he has yet to encounter. After playing a snowy world in Mario, the player may anticipate a volcanic world. More obviously, a player who has progressed to level 7 in *Tetris*, and experienced speed increases at each level, will likely anticipate further speed increases.

Before continuing, it is important to note that not all players participate in the Tertiary Level of interpretation. Just as it is possible to read a book without developing a critical reading of the text, it is possible to play a game without a comprehensive reflection on what a game's experience entails and signifies. Engaging a game at the Tertiary Level entails a certain degree of meta-level extra-referential thinking that is blissfully not-essential for enjoying, or even understanding games. One does not need to appreciate the links between gladiatorial combat and football to appreciate and comprehend the Super Bowl or to play a game of touch football in the

front yard. That said, those metaphorical connections will become increasingly apparent to fans who become more deeply involved with the game.

The Interpretive Spiral: Tertiary Level		
Mechanics	Thematic	Affective
<p>Instantiation: Mechanical Escalation concludes.</p> <p>Prediction & Reaction: The player's highly developed Gamé allows him to accurately predict most non-randomized changes to the gamestate.</p> <p>Feedback: same as above.</p> <p>Reflexive Evaluation & Comparison: The player reflexively evaluates his own performance during gameplay, and reflexively compares other activities to his gameplay experience.</p>	<p>Instantiation: Same as above, though the player has likely completed a game's narrative or structural progression at least once.</p> <p>Perception: The player is intimately familiar with the game's diegesis, audiovisual motifs and structure.</p> <p>Feedback: Same as above.</p> <p>Reflection: The player can comprehensively analyze the game's diegesis and look back at the significance of certain isolated elements.</p>	<p>Instantiation: Escalation and narrative progression have concluded. Player may replay specific instances of gameplay for purposes of reflection, analysis and enjoyment.</p> <p>Prediction & Reaction: The player has internalized most of the game's affects.</p> <p>Prescription: The player has encountered all of the game's normal prescriptions.</p> <p>Translation: The player can readily recognize parallels between his Gamé and other experiences.</p>

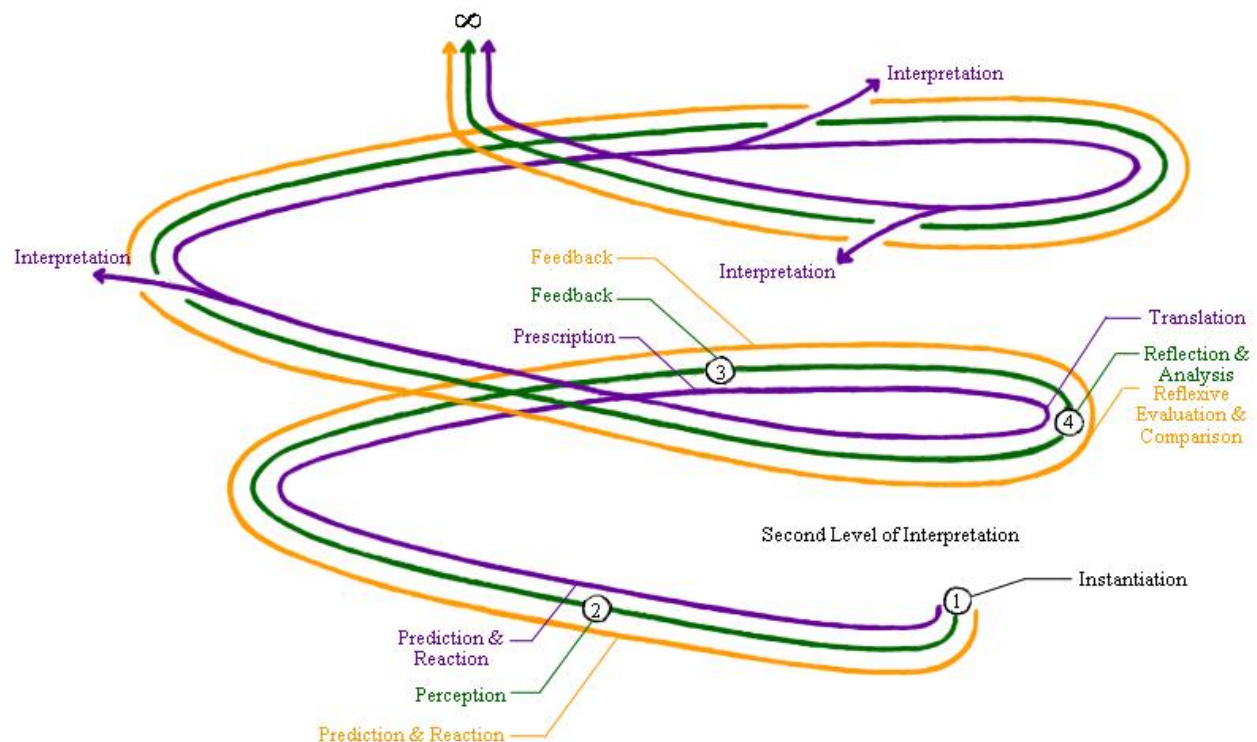


Figure 2.5: The Interpretive Spiral: Tertiary Level Process Loop

Instantiation is largely unchanged from the Secondary Level of interpretation, except that all instances of Escalation have likely concluded. At this level, the player has seen all, or almost all, of the game's new tricks. No new game objects, or rules are introduced. Just as it is common for people conducting close-readings on literature to re-read books, it is common for players to re-play game narratives. They may replay the entire game, or, if the game allows for it, through save-states or other modes, they may only replay their favorite parts.

Consequently, the player will begin to rely upon his prior experiences and Gamé to guide his actions, as opposed to looking at the game's signifiers. **Assessment and Reaction** gives way to **Prediction and Reaction**. The player's Gamé is not necessarily perfect; such a thing is almost impossible, especially for very complicated games. While the player will not always predict things correctly, he will be right most of the time. **Perception** largely remains constant from the prior level, though the player is now intimately familiar with the title's diegesis, audiovisual motifs, and narrative. The player's interpretation of certain songs, sound effects and graphical symbols will carry additional emotional significance based on the player's history with the game.

Feedback and Prescription, like instantiation, are now largely 'fixed' phenomena that the player is familiar with. The player has experienced all, or most, of the game's normal prescribed behaviors.

Since the player is so familiar with the game at this state, the **Anticipation** process disappears in each category of the spiral. In the mechanical category of this level, the player no longer needs to 'anticipate' the game because he is so familiar with it. He knows how enemies will behave and what obstacles exist. These predictions are not trivial or transparent, but must be achieved through considerable practice.

In the mechanical category, he still **Evaluates** his own performances. In fact, his knowledge of the game likely renders such self-assessment inescapable. Instead of anticipating, the player begins to **Reflexively Compare** his experience of the game to other experiences.

This will cause the player to find parallels between his experience of play and other unrelated activities. The player may transpose the experience of waiting for an I-block in *Tetris* onto the act of hoping for a specific card in poker, or searching for a specific puzzle piece when constructing a jig-saw puzzle. Both of these parallels are imperfect, of course. The poker example only accounts for waiting and the semi-random game object generation, and the puzzle example only accounts for the spatial-fitting aspect of the I-block.

In the Thematic category, **Anticipation** and **Evaluation** gives way to **Reflection**. This allows players to consider discrete elements of the game as individual parts and aspects of a comprehensive whole. This is the same sort of process that occurs in the close reading of texts and movies.

The relationship between **Reflexive Comparison** and **Reflection** is similar to that of **Assessment** and **Evaluation**. They are both meaning-making processes, but the former pre-emptively attempts to make metaphorical connections by imposing the game onto other activities, while the latter recognizes connections based on experiences. When these processes combine in the affective category, **Translation** occurs. Translation can be thought of as affective metaphor making, and it allows the player to accurately connect his experience of play to other domains. In order for an interpretation of a game to be comprehensive it must be translatable to other experiences. I do not mean to imply that the game must correspond to a single other experience or concept. In fact truly successful and unique games often can only be described

through translations that include several different experiences. I will demonstrate examples of Translation with each of the three main titles I analyze.

Other processes that may occur during any level of the Interpretive Spiral include **Indexical** and **Subversive** practices. **Indexical** practices include consulting walkthroughs, reading articles such as reviews or interviews with a games creator, and playing other titles in a game series. Games are capable of encouraging indexical activities through references, but these references are not essential for the interpretive process. **Subversive** practices can include playing a game in a way that deliberately runs contrary to the designer's apparent intentions. One obvious behavior that can be both Indexical and Subversive, is cheating. Games often send players to the internet if they get stuck, or even frustrated. This is not an essential aspect of videogame play or interpretation however, and as such it is not included in my model.

In Chapter 6, I demonstrate that purely subversive forms of play are most likely to occur during the Tertiary Level of interpretation, and they can be modeled with a separate application of the Interpretive Spiral. Even less than cheating, they are not essential to the process of interpretation, and as such, they are not included in the Interpretive Spiral. Other subversive practices, like modifying the code in the game's software (modding), exploiting existing bugs and glitches in the game software, and repurposing the game's software as a platform for other activities like movie-making (machinima), exceed the scope of the interpretive spiral.

2.3 Useful Practices

As you may have noticed, certain repeating processes in the interpretive spiral decrease in significance. If the reviewer using the Interpretive Spiral adequately describes the instantiation

and feedback cycles at the fundamental and secondary levels of play, there is often little reason to revisit them in great detail in the Tertiary Level of analysis.

It is also not necessary to apply every level of the Spiral to a game for effective analysis. If one only wants to assess interpretation in the learning phase of a game, they may apply only the Fundamental Level of the Spiral to the game. Admittedly, it is more difficult to apply higher levels of interpretation to a game in isolation. Before one can describe the “Translation,” processes that occur in the Tertiary Level of interpretation, it is crucial to know what experiences are being translated. Since these experiences are defined in the Fundamental and Secondary levels, one will likely end up performing the analysis of those earlier levels anyway.

This partial translation can be used to easily describe alternative game modes that feature simple variations. I define a **game mode** as a programmed variation in the way a game must be played. Adjustable difficulty settings tend to be the simplest form of alternate game modes, and generally only adjust variables governing health, speed, and power. These simple numerical tweaks often only affect the pace at which the player proceeds through the levels of play and interpretation. The Interpretive Spiral can be applied to unique game modes in isolation as well. This is a particularly fruitful practice for designers who are trying to discern whether their alternate modes provide meaningfully different play experiences. If a designer is hoping to create “Normal” and “Hard” settings that result in entirely different experiences, for example, subjecting them both to the spiral would provide a telling comparison.

There are also certain game modes, like “Multiplayer” versus “Campaign” modes that feature substantial mechanical and thematic differences that are more accurately analyzed with unique applications of the interpretive spiral. In certain cases, choices between playable

characters will result in drastically different experiences. In Capcom's *Mega Man X 4*, players have the choice of either playing as X, who attacks using a canon and acquires special weapons with limited ammunition, and Zero, who attacks using a sword and learns special techniques he can use limitlessly. Both characters also have unique thematic segments and fight unique bosses. These choices not only affect the difficulty of the game, but the tactics the player must use and the narrative that frames the action. Conversely, in the arcade game *Metal Slug 2* players can pick between Marco, Tarma, Eri, and Fiolina. These characters are primarily a method for visually distinguishing between multiple players, and only affect the appearance of the player's avatar. Consequently, applying the Interpretive Spiral to playing as Marco and to playing as Eri would be heavily redundant and unproductive.

Gamers can and frequently do impose extra rules on themselves (avoiding war at any cost in *Civilization V*), but those specialized styles of play are arguably analogous to playing meaningfully different game modes, which deserve their own applications of the Interpretive Spiral. I refer to this practice as **Constraint Play** and discuss it in greater detail in Chapters 5 and 6. When a preference becomes a hard rule that the player consciously and deliberately adheres to, the player's play style should be considered a form of Constraint Play, as the player is effectively experiencing a different game. For example, in games featuring moral choice systems, such as Bioware's *Knights of the Old Republic* or Bethesda's *Fallout* franchises, when a player decides to play a "good" character at the exclusion of making any decisions that would earn their character "bad" points, they are playing in a thematically distinct way that will yield a unique interpretive experience. Consequently, to fully interpret a game that offers players with many meaningfully distinct game modes, multiple applications of the interpretive spiral may be necessary.

To illustrate how my model can be effectively applied, I have chosen three foundational games to analyze using the full application of the spiral, and two supplementary titles that examine specific aspects of the Spiral in detail.

Chapter 3: Mario 64, Skills and Literacy

3.1 Introduction to Ludic Literacy

As I have already mentioned, critical interpretation is a particularly difficult process to analyze because it is both personal and subjective. It is tempting to conclude that this is especially true of videogames, because their interactive nature demands player participation, and a player's personal preference has a direct impact on the games content. I am arguing, however, that interactivity is also present in analog artifacts, specifically where interpretation is concerned. There could be no interpretation without interaction.

The distinguishing feature about videogames is they explicitly and automatically evaluate and judge the user's interactions. In a thought-provoking informally written article titled, "How You Got Videogames Wrong: It's All Interactive," game critic and author Eric Lockaby refers to this procedural feedback as "active criticism." This resonates with Arsenault and Perron's claim that the gamer is an inter-re-actor as opposed to a simple inter-actor. "The player does not act so much as he reacts to what the game presents to him, and similarly, the game reacts to his input" (Arsenault and Perron, P. 119). Since the videogame play experience begins with the videogame prompting action from the player, he is in a state of constant reaction to the game. The unique feature of gameplay therefore is not interactivity, as books, films, and traditional games are all interactive, especially where interpretation, and critical interpretation in particular, are concerned. As Bogost argues in the conclusion to "Comparative Videogame Criticism:"

"...the critic and the video game share the same processes of selection and configuration. The ad hoc, even hackneyed process of comparativecriticism should include those artifacts left out by

Aarseth's (1997) cybertext: Poetry, film, literature that are not obviously made configurative by the reader may likewise be done so by the critic."
-Bogost, 2006

While videogames may be interactive in more ostentatious ways than analog media, once a 'reader' seeks to create a critique, or an interpretation of an artifact, he enters an interactive feedback loop with the 'text.' Consequently, the distinguishing feature of videogame artifacts is the constant cycle of automated evaluation of player action that occurs through active criticism. All videogames feature explicit active criticism in the form of proceduralized feedback, whether it is through animations, score increases or mechanical changes. Celia Pearce suggests this playful dynamic in the opening of *Communities of Play* with the question, "Do we play games or do they play us?" (p. 53).

No approximation exists in analog artifacts. If an English student is trying to create a feminist reading of *The Sound and the Fury*, he will have to weigh his interpretations against any contradictory evidence the text presents (like the lack of a female first-person perspective, Jason's misogyny and Quentin's sexualized possessiveness of his sister) and any anticipated counter arguments from other scholars. The text itself does not point out the contradictions in the reader's intended argument in the way that a misunderstood game mechanic would immediately penalize the player. The closest literary approximations to the ludic rules games impose on players are the rules of grammar, spelling and syntax that make up written language. The assumption these rules make, is that the reader is literate. I would argue that most videogames make comparable assumptions about the players' capabilities.

I believe drawing a brief distinction between skills and literacies is of crucial importance, as certain schools of new media thought appear eager to conflate the two. For example, I am highly suspicious of the USC Annenberg Foundation sponsored-

Newmedialiteracies.org designation of ‘Multitasking’ and ‘Judgement’ as ‘New Media Literacies.’ I would refer to those qualities as skills which I define as capacities to influence the world in intended ways. Building off of that definition, I define literacy as the specific skill, or combination of skills, that allow people to comprehend (“read”) and create (“write”) meaning in a given sign system. Furthermore I present the term ludic literacy as a player’s capacity to read and write within a given gamestate. These definitions are simplified derivations of the semiotic approach employed by James Paul Gee in his watershed book *What Video Games have to Teach us about Learning and Literacy* (2003). Gee’s concept of literacy is more nuanced and examines player literacies (ludic and traditional), as a crucial function of identity building. Since my model focuses on video game artifacts, as opposed to the people who use them, this analysis is beyond the scope of my spiral.

While I am skeptical of the infinite fragmentation and plurality of literacies, I agree with Kurt Squire’s argument against the analog notion that literacy can be described as an absolute binary separating ‘readers’ from ‘non-readers,’ (Squire, 2007), and that acknowledging the emergence of new literacies somehow endangers the integrity of traditional literacy. Squire presents this argument at the beginning of “Video-game Literacies: A Literacy of Expertise,” where he also advocates the study of both games as artifacts and play as social practice. Squire writes “Games literacy can be defined of as developing expertise in designing rewarding experiences for oneself within a gameworld (particularly within the game’s semiotic and rule systems).” Again, I agree with Squire that becoming literate in a game requires players to gradually build expertise (competence and experience with certain skills), and as a result of interacting with a game’s sign system, players will gain a degree of game design savvy. I find the suggestion that a player must be able to ‘design rewarding experiences,’ more contentious,

however. For one, it implies that we only play for rewarding feelings and positive experiences, rather than out of boredom, curiosity or the desire to use games as a training platform.

Furthermore, the phrasing also runs the risk of conflating game play with game design for layman. This ability to write in gamestates is distinct from the ability to write (create) a game; the former ability entails effectively using the control inputs available to him to effect change in the gamestate, while the latter entails game-design and computer programming. However, I will demonstrate that those who engage games at the tertiary, metaphor-making level of interpretation gain at least an amateur degree of literacy in game-design, as well as being proficient at playing games in the same genre. I would argue that the transition from ludic literacy to game-design literacy begins with the sort of close-reading and critical analysis facilitated by the Interpretive Spiral, and is ultimately realized through programming skills.

The skills required for ludic literacy, which is again, writing in the gamestate, depends on the game being played. The camera control in *Mario 64* is only one example of a ludic literacy. Pearce presents another example of videogame literacy in her consideration of *Uru* in the paper, “Spatial Literacy: Reading (and Writing) Game Space.” To use an analog example, chess requires the player to move pieces from one square to another, in accordance with each piece’s movement restriction, and at least a partial knowledge of piece interactions such as check, threatening, protecting, and taking pieces. In *Super Mario Bros.* it means knowing which buttons will yield which movements on screen, the basic consequences of colliding with different type of game objects, and the rewards for collecting game objects.

3.2 A New Dimension

I cannot think of a more appropriate point of departure for a discussion of literacy's role in the interpretation of videogames than Mario. Nintendo's *Super Mario Bros.* franchise is one of the most widely recognized and highly praised videogame franchises in the world. Each title in the core *Super Mario Bros.* franchise¹ has earned some degree of acclaim and recognition and a particularly noteworthy installment in the series is *Super Mario 64*. This game marks Mario's first appearance in 3D², and it is a particularly potent point of discussion in regards to literacy as it simultaneously builds on gameplay principles established in Mario's earlier 2-dimensional adventures, while introducing a whole other spatial dimension of interaction, establishing the groundwork for a new genre of game; the 3D platformer.

Super Mario 64 was originally released for the Nintendo 64 in 1996. The game has since been rereleased for the Nintendo Wii through Nintendo's Virtual Console service in 2006. Unless otherwise stated, my observations pertain to this re-release of the game, which I played using a Nintendo Gamecube controller.



Figure 3.1: Box art for the North American release of Super Mario 64

¹ As opposed to the *Mario Sports*, *Mario Party*, and *Paper Mario/Mario RPG* franchises.

² By 3D, I refer to gameplay with 3 interactive spatial dimensions, as opposed to graphics rendered with 3D visuals.

Even before it earned universal acclaim, *Mario 64* was a high-profile title for several reasons. It was the “killer app” for the Nintendo 64 console, and featured a large advertising budget as a consequence. It was also a title from the renowned game designer, Shigeru Miyamoto, who originally created Mario and several other noteworthy Nintendo franchises and characters. Finally, *Mario 64* was one of the world’s first titles to feature true 3D gameplay, on any gaming platform.

When we apply the pre-play level of the analytical spiral to these elements, we can get an understanding of how players likely anticipated Super Mario 64 at the time of the title’s launch:

<i>Mario 64</i> Interpretation: Pre-play Level (circa 1996)		
Gameplay Spiral	Thematic Spiral	Affective Spiral
Anticipation: Traditional Mario gameplay (Run and jump-based navigation and combat, linear levels featuring unique enemies and obstacles) in 3 spatial dimensions, implied by the Nintendo 64 controller’s analog joystick.	Anticipation: The game’s box art depicts an image of Mario flying with a winged hat with a castle and two classic Mario enemies in the background. This is all rendered in 3D graphics (at much higher fidelity than the in-game graphics) suggesting cutting edge visuals. The presence of the castle and enemies imply elements of traditional Mario gameplay and narrative.	Anticipation: The cutting-edge graphics and technology allow the familiar Mario story to explore more complicated worlds (and obstacles) rendered with greater fidelity than ever before.

Those who have played other, Mario titles may anticipate certain aspects of *Mario 64*’s gameplay based on established videogame conventions. Videogame conventions, like literary or cinematic conventions, can be defined as long-established practices of authorship (in this case, game-design) that define a specific videogame genre. Players rely on these practices to shape their initial impressions of and early experimentation with a game. Conventions associated with the hitherto exclusively 2-dimensional platforming genre included running to the right of the screen to progress, jumping to avoid dangerous obstacles, and collecting items for points. The Mario series has a few specific conventions, such as jumping on enemies to kill them, and

receiving an extra life for every 100 coins collected, hitting bricks to unlock new game objects, and specific game objects, like the koopa shell, and the super mushroom and fire flower power-ups.

Mario veterans or even people with a passing knowledge of the series' characters will also be able to accurately predict the premise of the narrative and its entire dramatic arc before playing the game: Bowser has kidnapped Princess Toadstool (or Peach as you prefer) and it is up to Mario to save her. Sure enough, Mario is invited to Peach's castle only to discover that Bowser has imprisoned her and the castle's other residents in the walls. There is no character development, or plot twists of any kind. As per the conventions established by earlier installments in the *Mario* franchise, there are several confrontations with Bowser leading up to a final showdown.

The most significant changes that the game made to the *Mario* franchise, and contributed to the adventure game genre, are not evident until the player experiences the actual game. There is another important departure from the established mechanical and thematic Mario formula, beyond the addition of a third dimension. Instead of traveling through a series of incredibly treacherous linear paths to rescue the princess, Mario must instead collect stolen power stars to unlock the castle's doors and face Bowser. These power stars are hidden in levels that the player accesses by jumping into paintings scattered throughout the castle.

This change in goals makes only a slight difference to the plot, but it was an extremely important conceptual step forward for game-design. In 2D, Mario's gameplay is focused on traveling from point A to point B in a linear fashion. Certain titles featured limited examples of non-linearity, in the form of alternate exits and 'Warp Zones,' but for the most part, once a level

was completed, players had no reason to return to it. In the franchise's earlier installments, players were unable to revisit levels they had completed without restarting the game and proceeding from the beginning. *Mario 64*'s designers could have very easily imported this linear play-style into a 3D world. Instead, they shifted the focus of gameplay from traversing obstacle courses into completing discrete objectives within a 3D environment. This is an important departure from the goal of earlier Mario games, where players simply needed to reach the end of a level as quickly possible, as it introduces the possibility of multiple endings, and multiple ways to gain stars. A conceptual analog would be replacing a series of elaborate hurdles courses with a series of elaborate playgrounds, where participants are not only rewarded for running and jumping quickly, but using all the different types of equipment in novel ways. Running quickly and precise jumping are constantly necessary and rewarded, but now, sliding, climbing, fisticuffs, item collection and switch operation are also required. Each of these new capabilities are facets of mechanical category in the Fundamental Level of the spiral (charted on the following page).

The game is structured so that a player does not need to obtain every power star, so there is some latitude in regards to how much of these activities each player will need to engage in. A player who seeks out and completes all of the collection based stars will likely have a different experience of the game than a player who avoids collection and seeks out boss fights, and these different experiences will yield distinct interpretations. I have mentioned that the great challenge to surmount in discussing player performance stems from the inherent subjectivity of the interpretative process. There are a great many ways to play a single game. This is especially true of very "immersive" titles like those in *The Elder Scrolls*, *Grand Theft Auto* franchises as well as other titles in the Sandbox, MMO genres of games. *Mario 64* was arguably the most immersive

installment in the franchise thus far, as the added dimension of movement and freedom to select multiple objectives bestow the player with a breadth of choice that is closer to reality than the highly abstracted nature of two-dimensional play.

Where ludic literacy is concerned, the most radical new ability the player is given in *Mario 64* is the ability to control his own perspective of the game world. Whereas earlier Mario games had fixed side-long perspectives, *Mario 64* allows and occasionally requires the player to manually adjust the perspective at certain points in play. This skill of camera manipulation has proven to be particularly prolific, being a very important aspect of gameplay for several titles. It is distinct from other skills introduced in *Mario 64* however, in that it does not allow the player to alter (or write) the gamestate, but rather assists in his ability to read the gamestate. Rotating the camera will not affect Mario, enemies or other game objects, but it may help the player line up a tricky jump or throw an object more accurately.

The idea of inviting “the reader,” to choose how he navigates the physical form of a text has been a popular trope in post-modern literature. Mark Danielewski achieves a similar effect to camera control in his book, *House of Leaves*, by using unconventional formatting and text placement, and gratuitous use of foot-notes, forcing the reader to choose between different threads of the text that are effectively presented simultaneously. This effect of user-determined content is similar to Aarseth’s term of ‘configurability,’ (Aarseth, 1997) and Roland Barthes’ concept of the ‘Writerly Text’ (Barthes, 1973).

Navigating these works requires a specific kind of meta-level thinking. The player must consider the game in relation to itself, and to other similar experiences. Gee identifies the type of learning required by games as an example of his “Metalevel Thinking about Semiotic Domains

Principle.” According to this learning principle, players (and readers) must consider the relationships between two different semiotic domains to navigate through one of the domains considered. In the case of *Mario 64*, those domains are videogame play, and real-world perspective (field-of-vision, angled perspective). The player is forced to not only consume and write in the game world, but to consider external, non-diegetic factors that guide (or constrain) his consumption and inscription.

<i>Mario 64</i> Interpretation: Fundamental Level		
Gameplay Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: The game features both Progressive and Branching instantiation.</p> <p>Experimentation: Player learns:</p> <ul style="list-style-type: none"> • How to move and fight • How to control the camera • What different game objects do, and how to differentiate between them • To earn Stars to progress <p>Feedback: Game responds to:</p> <ul style="list-style-type: none"> • Player exploration • Item collection • Objective completion • Combat • Player failure • Player Idleness <p>Evaluation & Anticipation: Player determines whether the available actions in 3D space conform to his actions, and what other ‘objectives’ he can expect to undertake to obtain Power Stars in the future.</p>	<p>Instantiation: The central hub is a castle, while individual levels each have their own motif (battlefield, snowy, ocean, etc).</p> <p>Perception: Players learn the general logic of the game world (you can jump into paintings, surf on turtle shells, recover health by picking up coins).</p> <p>Feedback: The game rewards players for picking up items with positive sound effects or music, penalizes damage with negative sound effects and animations. The game also rewards players by giving them new lands to explore.</p> <p>Evaluation & Anticipation: Players learn the premise and can predict the general arc of the story. They may also predict the themes of new segments based on those they have already experienced, or their experience with other Mario titles.</p>	<p>Instantiation: The game presents the player with a central hub level, and a series of differently themed playground-like levels.</p> <p>Experimentation: The player learns how to read and write 3D space.</p> <p>Prescription: The game encourages players to:</p> <ul style="list-style-type: none"> • To fully explore their environment • Practice move patterns • Collect items • Avoid damage <p>Evaluation & Anticipation: The player develops a generalized Gamé to account for most enemies, obstacles and begins developing patterns for objectives.</p>

Like the majority of modern videogames, *Mario 64* features a mix of progressive and branching instantiations. Once again³, progressive instantiation refers to a game space that is larger than a play screen can represent, and examples of games with progressive instantiation include *Pitfall!* and *Adventure* for the Atari. The screen changes, or progresses, as the player

³ I will first describe these terms in the chapter that defines my rubric.

moves through it. Branching instantiation refers to the presence of discrete worlds (levels) within a larger world (hub) structure. Bob-omb Battlefield, Cool, Cool Mountain, and Shifting Sands Lands are all branches that are accessible through but distinct from Peach's Castle.

This combination of progressive and branching instantiation is not unique to 3D games. In fact, both *Super Mario Bros. 3* and *Super Mario World*, (earlier, 2-dimensional installments in the core Mario franchise, referred to as *Mario 3* and *World* hereafter) featured over-world maps that the player would have to navigate to travel between levels. However, these maps were heavily abstracted representations of Mario's world and player interaction is hardly more complex than using a cursor to navigate a non-diegetic game menu. Even though the 2D over world form of navigation allows for nonlinearity, it is much more stochastic than *Mario 64*'s approach, which allows the player to move freely through one level to the other.



Figure 3.2: Super Mario World Over World Map

In *Mario 64*, navigating the hub has the exact same mechanics as navigating individual segments or levels; the hub itself is a fully interactive level. Rather than lines branching out to other lines, or even lines branching out to linear “volumes” of space, the game presents broadly

navigable volumes of space that branch into other broadly navigable volumes. A player's chosen path can be mapped in a linear fashion after they complete the game, but his interaction with the world is much more random (and conducive to experimentation) than it is stochastic. The fact that the player is always embodied as Mario, as opposed to an abstract "Mario Icon," as in the over world map screens, increases the player's sense of immersion in the game world. At the interpretive level, this means that the player's Gamé only needs to account for one type of spatial navigation. It also means that the player must create his own mental maps of Peach's Castle, and the worlds he visits.

This consistent approach to spatial navigation is not inherently superior to a mixed approach. A mix of abstract and embodied forms of navigation results in a more complex thematic layer of a game. The over-world map screens in *World* and *Mario 3* can be likened to the world maps included with *The Lord of The Rings* and other similar fantasy novels, or perhaps more accurately, the map-based travel sequences of *Casablanca* and the *Indiana Jones* films. We have abstract representations of travel, paired with specific, embodied description of action.

Mario 64 is well-served by the design decision to use only embodied navigation, as it was acclimating its audiences to a completely new type of spatial navigation. It is interesting to note that the *Mario Galaxy* games (later 3D installment in the main Mario franchise), reintroduces abstract mapping screen in addition to a centralized hub.

The initial level of play in *Mario 64* encourages players to take risks, facilitating the natural experimental phase of the interpretive process. Experimentation is further encouraged by multiple forms of feedback. At the fundamental level of interpretation, enemy and hazard collision is obviously penalized with a staggering animation, exaggerated yelps and groans from

Mario, and a decrease in an eight-segmented health bar. Conversely, players are obviously awarded when they collect coins, which restore any lost health and increase a coin-collection counter. Rarer coins yield greater rewards. Red coins increase a second counter that appears directly over Mario's head, almost as if it were a part of the game space, and blue coins increase the normal coin counter by 8 and restore a large amount of health. Coins are completely eclipsed by stars however, which is the game's highest reward for experimentation. In addition to their narrative significance (they are mentioned multiple times by NPCs), they unlock new Segments in the Hub level allowing for more exploration. Finally, each star is received with great procedural fanfare, with Mario doing a victory dance and celebratory music playing.

As players move to the secondary level of interpretation, they may begin to predict the themes of new level segments. After playing Jolly Roger Bay and Cool, Cool Mountain (water and snow-themed worlds respectively), they may anticipate playing in a dry or hot world later on. Indeed, players will end up traveling to a desert and a lava-filled world in the next section of the castle they unlock. Players might also anticipate a level based on their experience of earlier Mario titles. Those who played through *World* may be unsurprised to run into the haunted house themed level, Big Boo's Haunt.

Players will also begin to notice how the game assesses their performance, and how it implicitly challenges players to improve their performance: every time a power star is recovered, Mario is returned to Peach's Castle and both his completion time and total collected coins are tallied. These scores have no effect on the player's ability to progress through the game, but they can be considered gauges of the player's mastery. When re-entering a level, a player may reselect a Power Star he has already obtained, and try for a better time and higher coin count, rather than attempting to gain a new star. Arsenault and Perron refer to this dynamic, of being

able to choose between playing for progression and playing for mastery, as Video-Ludic Tension. A second level of Video-Ludic Tension is introduced by the over-abundance of Power Stars within the levels themselves. If a player is simply looking to beat Bowser and rescue the Princess, completing the game's thematic narrative, he need only obtain a few stars from each level. If he decides to play for mastery however, he can attempt to gain every star from every level.

It should be noted that the player will not receive any special rewards for clearing a level faster. When a player gains 100 yellow coins, or 8 red coins, he is rewarded with a star, but otherwise, the amount of coins he collects while earning *other* stars have no mechanical significance on play. Yet simply knowing that the game is tracking his completion times and collection amounts may change the way the player experiences the game, and in turn, the way he assesses and interprets the game as a whole. In *Mario 64*, these forms of Active Criticism result in the maxims that “collecting more items is better,” and “completing faster is better,” as higher coin counts and lower clear times will replace previous scores in the same category. Players who are playing strictly for narrative progression may completely ignore these ratings however, especially since they have no impact on the game's mechanics.

Conversely, if the player collects all 120 stars, he *will* be diagetically rewarded. A canon outside the castle will open, allowing Mario to reach the top of the castle, where he can talk to Yoshi (a popular Nintendo character introduced in *World*). Yoshi will thank the player, give him 100 extra lives, and an enhanced triple-jump move. Rewarding thorough players with extra thematic (cut scenes, concept art) and mechanical content (new abilities or game objects) for playing a game to completion has become increasingly common in modern videogames. Incentivizing certain tasks can transform pleasurable gameplay into a grind by forcing players to

participate activities they might otherwise skip (obtaining a particularly difficult star) to get what they want (meeting with Yoshi). More charitably, such rewards can be interpreted as an acknowledgement of a player's achievements. *Mario 64* arguably falls into the second category as opposed to the first, because the rewards for total completion are secret, as opposed to a carrot being dangled in front of the player's nose, unlike the experience gauges and counters commonly found in role-playing games and modern first-person-shooters.

The introduction of optional extra content, obtainable only through a high degree of mastery, as well as assessment systems that do not affect mechanics, suggests that the 'mastery' and 'progression' dynamic is more complex than Arsenault and Perron initially suggest. If a player is playing for "progression," do they consider progress concluded when they beat Bowser for the third time and rescue the Princess, or when they reach the epilogue-like meeting with Yoshi? Similarly, when playing for mastery, which is more important: collecting all the stars in one level, or gaining a faster clear time for one star?

While both questions are open to individual interpretation and judgment, I believe *Mario 64*'s mechanics suggest an answer for the second question. Since gaining more stars unlocks more levels as the player progresses through the plot, (and eventually allows the player to reach the "secret" ending), the game's mechanics seem to prioritize the collection of more stars, as opposed to gaining individual stars faster.

Arsenault and Perron acknowledge that players who are playing for progression as opposed to mastery still need to improve their skills (Arsenault and Perron, page 121). Gee argues that challenge is a crucial element of both enjoyable and educational gameplay. His "Practice Principle" states that players get "lots of practice in a context where practice is not

boring,” while the “Regime of Competence Principle” states that games consistently force players to perform at the edge of their abilities, presenting tasks that are challenging, “but not ‘undoable.’” (p. Gee, 67-68). Challenge is essential for engaging the player, and ensuring that he can transfer the skills he learns to a number of different scenarios.

One potential earmark for when the player is transitioning from the Fundamental Stage of play to the secondary stage of play is when he reaches the necessary level of skills to be considered ludically literate in the game world. He understands the basic feedback loops employed by the game, and the general structure of the game. He may not know every possible action for winning in the game state, but he knows the general types of action that are available to him; in *Mario 64*’s case, different types of jumping, fighting, running and camera navigation.

<i>Mario 64</i> Interpretation: Secondary Level		
Gameplay Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: The hub continues to branch into new instances.</p> <p>Assessment & Reaction: The player learns to model his jump distance and height, and enemy movement speeds and patterns.</p> <p>Feedback: Variable Escalation occurs via new enemies, new obstacle types and increasingly complex environments. Mechanical Escalation occurs as the player unlocks new caps.</p> <p>Evaluation & Anticipation: the player learns to judge his own performance based on the game’s assessment of his play. Level completion is scored based on:</p> <ul style="list-style-type: none"> • Coins collected • Completion time <p>The game assesses over-all play-through progress based on:</p> <ul style="list-style-type: none"> • Total stars collected 	<p>Instantiation: New segments introduce new visual themes (such as haunted house, desert, and volcano).</p> <p>Perception: The player becomes accustomed to the specific features of each world theme, and the logic of <i>Mario 64</i>’s world as a whole.</p> <p>Feedback: Feedback remains mostly consistent with the initial level of gameplay, though variable escalation introduces new enemies, items and specially themed hazards.</p> <p>Evaluation & Anticipation: Players learn to associate certain enemies and hazards with specific environments (quicksand with desert). Again, players may guess the themes for new levels based on those they have already experienced.</p>	<p>Instantiation: As the hub expands, the new segments become more challenging and mechanically complex.</p> <p>Assessment & Reaction: The player’s Gamé expands to include all normal enemy and obstacle movement patterns.</p> <p>Prescription: The game encourages players:</p> <ul style="list-style-type: none"> • To uncover hidden functions within the environment • To collect as many items as possible • demonstrate finessed navigation • To seek out and defeat enemies <p>Evaluation & Anticipation: Player modifies his general Gamé to account for specific environments and different kinds of objectives to obtain power stars.</p>

The most prominent shift that occurs between the first and second levels of interpretation in *Mario* is the player's adaptation to the game's new environments. Examine the Secondary Level of interpretation, and notice the focus on adapting to new variables.

As the player progresses, the branching levels grow more complex with new enemy types, more gaps and platforms requiring precision jumping and completely new hazards like water and quicksand. These new features are a form of Escalation, or increasing complication and challenge in gameplay. Escalation can occur in a variety of ways. The type of escalation that occurs in *Mario 64* is chiefly Variable Escalation, which introduces variants of game objects within established categories that complicate play. One example of Variable Escalation is the inclusion of a new terrain type; Ice causes the player to slip slightly after running on them, Lava causes players to take damage, launch into the air and run automatically. Mechanical Escalation also occurs in the second level of play. Mechanical Escalation also occurs by introducing new rules or types of interaction; for instance, when Mario 'unlocks' the wing cap, he gains the ability to fly when he touches the cap.

Abstract and arcade games typically feature Numeric Escalation, which generally occurs through increases in speed, damage and other aspects of gameplay that can be expressed through arithmetic values. This type of escalation is largely absent from *Mario*; the same enemies move at the same speed and deal the same amount of damage regardless of which level they appear in. Changing this would detract from the game's presentation of a logically consistent, if absurd, virtual world.

One of the ways this logic manifests is through certain patterns in the objectives for obtaining power stars. After the player first collects 8 red coins or 100 gold ones, he will know

that he can obtain a star in a similar fashion in other levels. Another reoccurring objective is the boss fight, where Mario must defeat one of Bowser's powerful henchmen in one-on-one combat. Yet another reoccurring objective pattern is the race where the player must out-run, or out-slide another character and be rewarded with a star. Most of the stars defy easy categorization, including elements of puzzle-solving and platform jumping that are specifically linked to the features of a given environment (changing the water level in Wet Dry World, or freeing the chain-chomp in Bob-omb battlefield). Yet as the player progresses through the game, he will come to develop specific strategies for the specific objective types (learning the boss's pattern in a boss fight, jumping and diving in races, seeking out and defeating enemies to get more coins for coin collection stars).

The most obvious literary comparison that can be made is Lewis Carroll's *Alice in Wonderland* and *Through the Looking-Glass and What Alice Found There*. In Alice's adventures, like in *Mario 64*, character development is kept to a minimal and the plot occasionally flirts with incoherence. Readers are instead invited to play with text's riddles and appreciate the strange ironic logic of wonderland. *Mario 64* actually contains a reference to Carroll's book. Shortly after unlocking the second section of the castle, the player will encounter a yellow rabbit in the castle basement. If the player manages to catch the rabbit (a frustrating endeavor) he will repeatedly say that he is late, and conclude with the rhyme, "Now let me be! I have a date! I cannot be late for tea!"

While literary references in videogames have become increasingly common as games have grown more sophisticated (and Alice is a particularly popular referent), examples of literary intertextuality are exceedingly rare for Nintendo. The allusion is apt, however. Mario's frame narrative strikes a conceptual accord with Carroll's books, as the paintings in Peach's Castle are

very similar to Alice's looking-glass. Tiny-Huge Island, a level unlocked late in the game, requires players to navigate the level as both a giant and micro-sized Mario, similar to the size-adjusting potions Alice encounters down the rabbit hole. The tone of both artifacts is also comparable. Carroll intended Alice's exploits to be entertaining for both children and adults, and *Mario 64* also successfully appeals to all ages. The contrast between Mario's inexhaustibly enthusiastic shouts and countless deaths is comparable to Carroll's light-hearted presentations of death and violence, with the card Queen comically crying for beheadings and the dark implications of Humpty Dumpty's unbirthday.

Since the reference is an isolated incident, it seems unlikely that the designers intended to 'legitimize' Mario by referencing classical literature. It is even less likely that they intended to meaningfully link Carroll's work to Mario's world. Rather, it seems like a simple homage or an assurance that the designers possessed the self-awareness to recognize the parallels listed above. At most, the reference seems to suggest a dreamlike attitude toward play and interpretation.

References to external artifacts can spur the transition to the metaphor-making tertiary level of videogame interpretation at the thematic spiral. The transition to the tertiary level of interpretation manifests in the gameplay spiral as the player's ability to exploit the quirks of the game's code. A simple exploit in *Mario 64* is recovering health by swimming. Whenever Mario surfaces, his health meter rapidly replenishes. This mechanic was designed to compensate for any health lost due to loss of breath while submerged, but it allows the player to recover from damage sustained from other sources as well. A more advanced and specific example of an exploit is leveraging a well-positioned long-jump to completely bypass an obstacle or section of a level to obtain a star.

Being able to toy with the game's mechanical quirks, and knowing the individual levels well enough to navigate them in a way that resists the designers' intentions demonstrates an advanced ability to deconstruct the game. This allows the player recognize parallels between his experiences of *Mario 64*, other games, and real life. While it is possible for the player to make those connections before reaching a high level of mastery, such translation is easier and more accurate when the player is drawing from a more detailed mental model of the system he is describing.

<i>Mario 64</i> Interpretation: Tertiary Level		
Gameplay Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: The Player discovers all of the hub's branches.</p> <p>Prediction & Reaction: The player is familiar with all enemy and obstacle types. He does not need to learn new strategies for fighting enemies.</p> <p>Feedback: the player has encountered all forms of Variable Escalation, so Feedback is consistent with earlier levels of interaction.</p> <p>Reflexive Evaluation & Comparison: The player evaluates himself based on item collection, expediency, and becomes fluent in reading and navigating voluminous spaces as well as linear ones. These skills translate to real experiences of exploration and other 3D games.</p>	<p>Instantiation: the player has encountered all the different level themes.</p> <p>Perception: The player knows what he can do across every world, and what unique opportunities and dangers each world presents.</p> <p>Feedback: Variable escalation concludes, and upon completion the game explicitly thanks the player for playing.</p> <p>Reflection: The player internalizes the distinct theme based structure of Mario's levels, and can imagine what worlds based on un-utilized themes might look like (outer space, jungle, cyber-punk, Victorian, film-noir). The player views Mario's world as a logically consistent, if disjointed and bizarre virtual reality.</p>	<p>Instantiation: The player will encounter all of the segments in the game world.</p> <p>Prediction & Reaction: The player has coping strategies for every obstacle and objective type.</p> <p>Prescription: Players are encouraged to:</p> <ul style="list-style-type: none"> • Collect all items • Mentally map each level in detail, and measure the timing and distance of each move • Aggressively seek out and defeat enemies <p>Translation: The player becomes proficient navigating 3D spaces. He learns to conceptualize new themed game worlds and view existing game worlds at a metalevel.</p>

So what sort of metaphors does *Mario 64*'s 3D world and non-linear gameplay inspire?

Mario 64 features some very complex and detailed representations of space, so it is of little surprise that it's gameplay cannot be easily summarized by wide-sweeping spatially-based metaphors like Lakoff and Johnson's "Orientational Metaphors," which "structure a whole system of concepts with respect to one another," (Lakoff and Johnson via Begy, 10). At the same

time, these metaphors are often close to being applicable. The popular “Up is Good” metaphor is generally applicable as stars tend to be hidden at the top of mountains or other high places (up is powerful) and Mario can defeat most enemies by jumping on them (up is control). But stars are also hidden underneath things or at the bottom of things, contradicting the over-arching metaphor. Another near miss is “Bigger is stronger,” as boss enemies are always large and imposing, and larger versions of normal minions are also harder to defeat. The bigger an obstacle or enemy, the more dangerous it tends to be. But this metaphor is contradicted by Mario himself, who handily defeats said goliaths.

As I have observed, the title’s greatest gameplay advance is the emphasis on user-determined exploration over stochastic linear progression. But the appearance of this space, and the meaningful variety of ways one can interact with it are the game’s most important thematic features, especially since the plot of the game is so shallow. To understand what is unique about Mario 64’s metaphorical affect, we must again look at earlier installments in the series.

As the *Mario* series (and the technology supporting it) developed, the number of backdrops that Mario journeys through has grown. The first game featured outdoor, underground, underwater and castle environments. *Mario 3* introduced desert, ice and sky backdrops and a hub-based world map, while *World* contributed haunted house s and a still greater variety of outdoor environments. This variation in locales allows players to experience the thrill of discovery when they first encounter a new backdrop, but it does not really allow for true exploration because the player cannot control what his next destination is.

In this sense, the themes of early installments of the series are similar to the second act of the ballet, *The Nutcracker*. The plot of the ballet, like *Mario* games and Carroll’s *Alice* stories, is

clearly of secondary importance to the variety of the spectacle. After the Mouse King is vanquished Clara and her toy-turned-prince journey to the Land of Sweets where they are treated to a sequence of ethnically themed dances. The sequence is surreal and the individual narrative significance of each dance is less important than the over-all procession of different choreographic and aesthetic styles. The choreography of each ethnic dance often tells a short story, especially if the dancers are effective performers. But *The Nutcracker* will still be complete regardless of whether the Spanish Dance depicts two suitors competing for a lusty senora or a single bullfighter wooing a coy maiden, so long as there is a Spanish Dance to be compared to the Chinese Dance and the Traditional Russian Dance. The same is true of the worlds in early *Mario* games. New realms are presented to the player as passing novelties, rather than real destinations, and their procession is more important than their individual value.

In *Mario 64* the content of each level is still intentionally disparate, showcasing a specific, bombastic extreme. But unlike *The Nutcracker* and the *Mario*'s that came before, the player is free to exhaustively explore and experiment with certain worlds and completely ignore others. It is tempting to liken this new experience to a travelogue, but the world is not cohesive enough to allow for the sense of gradual cultural and climatological change that is essential for the sensation of travel. The transitions to the different levels are abrupt and artificial. The gallery frame-narrative that the game presents fails for a similar reason. Each level is painted with a mathematically perfectly brush of computer code. Even though the content of each painting is different, the player cannot track the trajectory of the artists' skill, or any evolution of subject matter.

The actual affect *Mario 64* impresses on players is closer to visiting a theme park, going on a tour of a movie studio, or walking through every hotel on the Las Vegas strip. All these

pastiche-places share a common physical reality, but the aesthetic content of their constituent segments (whether they are movie sets, themed areas, or hotels) are dressed up to look as distinctive as possible. Yet none of these experiences account for Mario's playfulness. Even in Mario's most ride-like levels, the player is responsible for controlling Mario's movement down the slide and through space. The "look, but don't touch" nature of most studio tours directly contravenes Mario 64's prescriptions; the player is encouraged to fight every enemy, break every block, collect every coin, try every unlikely leap and die every death. Surprisingly, a visit to the Los Vegas strip is a slightly closer example, with the unlikely caveat that the purpose of the trip is not to gamble, watch a fight, or a show, but to enjoy the theme-based attractions of each hotel (dressing up as a Legionaire at Caesar's Palace, going for a gondola ride at The Venetian, strolling through the zoo at The Mirage, watching the Mardi Gras parade at The Rio). While suitably surreal, most of these experiences still fall prey to the same limitations of theme parks and studio tours; you cannot ride the tigers at The Mirage.

Ultimately, the affect of *Mario 64* may be best described as an Easter egg hunt in a wonderland, though not necessarily Carroll's. The experience of close-reading *Alice in Wonderland* or *Through the Looking-Glass*; wrestling with their riddles, now-obscure popular cultural references, creative use of traditional game iconography, comes closest to capturing the playfulness of the objectives in Mario's worlds, and the absurd logic of traveling from one strange place to another. Seeing as Carroll's works are loosely based on dreams and whimsy (as opposed to explicitly speculative fiction), dreaming is an apt metaphor for *Mario 64*. The emphasis on star-collection focuses the experience in the absence of a linear narrative, and allows the player to compete against himself (and others).

The lessons learned in this dreamlike contest can translate to reality in many ways. By playing *Mario 64*, one becomes literate with the design grammar and general structure of a *Mario 64* level. This allows me to imagine how a specific theme would translate to *Mario 64*. A film-noir level, for example, could be expected to include the essential physical interactions inherent to the film-noir theme, with a few caveats and exceptions. One could expect an urban environment with dark lighting and Bowser minions appropriate for that setting; perhaps Bullet Bills, Shy Guys and Goombas. As for the sort of tasks needed to win stars, you could expect a boss fight with a larger version of one of those enemies, climb up to a star via platforms that look like fire-escapes, and solve some sort of mystery; maybe by returning stolen goods. Though murder is a staple of noir, it does not fit the logical tone of *Mario 64*'s world, as Mario dies and kills enemies repeatedly without real consequence. Noir in general, would be a huge stretch for *Mario*, would be taxed heavily by Mario's bright clothes and childish language, but by playing the game and analyzing at an analytical level, I can model how such a thing might be done. This brief exercise displays a number of Gee's learning Principles⁴, and hopefully demonstrates that at the tertiary, metaphorical level of game interpretation, interpreters gain a degree of competence with designing new potential experiences based on their interactions with the game.

Again, I do not mean to conflate gameplay with game design, or suggest that acquiring ludic literacies through gameplay will transform a player into a professional game designer. The overwhelming majority of gamers do not go on to make games, just as the overwhelming majority of readers do not become authors. Still, the 3D navigational skills learned in Mario readily translate to another game within the same genre, and those pre-existing skills will shape the interpretive process in distinctive ways, as I demonstrate in the following section.

⁴ Most notably #2: Design Principle, #3: Semiotic Principle, #29: Transfer Principle and #30: Cultural Models About the World Principle.

3.3 ‘Reading’ *Banjo-Kazooie* by way of *Mario 64*

Mario 64’s influence on the gaming industry is such that it is still difficult to measure the full extent of its impact, but as you would expect the years immediately following its launch were saturated with imitators. Many developers attempted similar 3D translations of popular 2D franchises, including *Castlevania*, *Mega Man*, and *Sonic the Hedgehog* with mixed success, while others attempted to launch new mascot-driven franchises. Among these new properties Nintendo’s then-exclusive third-party developer, Rare, achieved commercial and critical success with *Banjo-Kazooie*, released for the Nintendo 64 in 1998⁵.



Figure 3.3: North American box-art for the Nintendo 64 release of *Banjo-Kazooie*

It must be noted that *Banjo-Kazooie* is extremely similar to *Mario 64*. In fact, to a third party who is unfamiliar with videogames, the game mechanics may appear identical to *Mario 64*, as the player controls a cartoonish avatar, who must explore various themed worlds, jump across platforms, collects objects and fights enemies. Given the tremendous similarities between the games, veterans of *Mario 64* will likely use that game’s game as a template for their mental

⁵ It should be noted that my analysis is actually based on Rare’s re-release of the game on the Xbox 360’s

mapping of *Banjo-Kazooie*. Consequently, it allows the player to engage at the metaphorical level of analysis at an earlier level than usual, as the player is already familiar with a comparable experience.

The pre-play level of *Banjo-Kazooie* is much simpler and much more accurate than *Mario 64*'s, as it is neither establishing an entirely new genre, nor continuing a long-established franchise. Furthermore, the game's box art explicitly hints at the game's collection-based gameplay, showing Banjo picking up a Jinjo, and a puzzle-piece. The most substantial departures and similarities to *Mario 64* are evident at the fundamental level of play, so in the interest of brevity I will not be discussing the pre-play, secondary or tertiary levels of analysis, but how the skills and literacies learned in Mario translate to *Banjo-Kazooie*.

Due to its tremendous similarity to *Mario 64*, the most obvious distinctions between the games are thematic. Though the player controls only a single avatar, he is controlling two characters simultaneously, as Kazooie the bird rides in Banjo the bear's backpack, and they use their shared abilities to progress through the world. The conjoined characters result in more complicated animations. In general, the 3D models and texturing in *Banjo-Kazooie* feature greater variety and much more complex geometry than those in *Mario 64*. The game also features a wider variety of sound effects, to accompany a wider variety of moves and collectible items (which I will discuss in more detail below).

The premise of the game's plot is structurally as simple as *Mario 64*'s (you are still rescuing an abducted 'maiden') though there is a greater emphasis on establishing—if not actually developing—the personalities of characters in the game through dialog. The antagonist, Gruntilda is an archetypical wicked witch with who is bent on stealing the beauty of Banjo's

sister, Tootie. Gruntilda frequently addresses the player with rhymes, which split the difference between insulting the heroes and poking fun at her own hideousness and lack of hygiene. Banjo is portrayed as a hickish oaf who plays the instrument of his namesake. Kazooie is the sarcastic one, and maintains a mocking banter with Bottles the mole, who teaches the duo new moves. Furthermore, most of the inanimate objectives in the game have faces and voices, though they generally only speak to explain their purpose to players.

<i>Banjo-Kazooie</i> Interpretation: Fundamental Level (Having played <i>Mario 64</i>)		
Gameplay Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: The game features Progressive and Branching navigation.</p> <p>Experimentation: Player learns:</p> <ul style="list-style-type: none"> How to modify the basic camera and movement skills earned in <i>Mario 64</i> What different game objects do How to unlock the Hub using Jiggies and notes <p>Feedback: Game responds to:</p> <ul style="list-style-type: none"> Player exploration Item collection Objective completion Combat Player failure Player idleness <p>Evaluation & Anticipation: Player determines how the available abilities compare to <i>Mario 64</i> and speculates about which new abilities he will learn. The player also speculates as to which obstacles from <i>Mario 64</i> will be appear in the game.</p>	<p>Instantiation: The game's hub is a hollowed-out mountain, while each level has a themed motif (mountains, swamp, sewer, etc.)</p> <p>Perception: Player learns the logic of the game-world (birds can carry bears, animals and inanimate objects can talk, magic exists).</p> <p>Feedback: The game registers every move and game object collision with a unique sound effect or musical track, rewards certain item collections with special animations. Gruntilda speaks to the characters as they explore, reminding them of the over-arching narrative.</p> <p>Evaluation & Anticipation: Players learn the premise of the story and the personality of each character through dialog. They may predict which new segments will appear based on their experience with <i>Mario 64</i>.</p>	<p>Instantiation: The game presents the player with a central hub level, and a series of differently themed playground-like levels.</p> <p>Experimentation: The player learns to track multiple, inter-related variables as they explore 3D space, while applying the general gameplay skills learned in <i>Mario 64</i>.</p> <p>Prescription: The game encourages players to:</p> <ul style="list-style-type: none"> Learn new skills from Bottles Collect items depending on the current situation Avoid damage <p>Evaluation & Anticipation: The general gamé that players develop uses <i>Mario 64</i>'s gamé as a template. The biggest distinction between the games is the emphasis on collecting many different items, leading to</p>

Banjo the game takes a much more explicit approach to explanation than *Mario 64*. There is a tutorial offered at the beginning of the game, where Bottles walks players through all of their basic abilities. All of this speech is rendered through text boxes on screen and accompanied by

unintelligible looping sound-effects intended to simulate speech, not unlike the way adult dialog is conveyed in *Peanuts* cartoons.

It is tempting to say that *Banjo-Kazooie*'s thematic layer is more developed or advanced than *Mario 64*'s as it features more characters, text and sound-effects. However, it seems reasonable to assume *Mario 64*'s designers consciously intended to keep narrative elements to a minimum, and more accurate to say that *Banjo-Kazooie*'s thematic layer is more elaborate, and designed for a more specific audience, namely children. Between the juvenile humor and rhymes, the wealth of cartoonish folly and goofy sound effects, and the emphasis on explicit explanation, *Banjo-Kazooie* clearly comes across as a game that has been 'aimed' at a younger audience by design, if only thematically.

A player who is familiar with *Mario 64* can easily skip the game's introductory tutorial and progress through the first few levels with relatively little difficulty. While Banjo and Kazooie have a few moves that are identical to Mario, such as a backflip that flies higher than normal jumps, and a ground-pounding jump stomp move, both with identical controls as *Mario 64*. Not all of Mario's moves appear in *Banjo-Kazooie* however, and some players may be surprised by the absence of certain abilities, like the long jump or wall-jump. Banjo-Kazooie's camera functions very similarly to Mario's, right down to occasionally using fixed angles and giving players the ability to look at the world through first person by pressing up on the C button.

The most prominent evolution—or perhaps “permutation” is a more appropriate word—of *Mario 64*'s gameplay that occurs in *Banjo-Kazooie* is an exaggerated emphasis on collection and unlocking mechanics. Over the entire course of *Mario 64*, players collect 5 different objects: gold, red and blue coins (which lead to power stars and recover health), power stars

(which control the hub level's segmentation), and extra lives. In *Banjo-Kazooie*, the player must collect musical notes and jigsaw puzzle pieces (which together control the hub level's segmentation), Jinjos (which function analogously to red coins in Mario), empty honeycomb pieces (which expand the player's maximum health bar), filled honeycomb pieces (which recover health), mumbo tokens (which pay for magical transformations), red feathers, gold feathers, eggs (ammunition for abilities) and extra lives, for a total of 10 different items. Furthermore, some levels require additional collectible items which must be retrieved and returned to characters in that level (such as presents in Freezeezy Peak). In *Mario 64*, the player begins with all of his abilities, and eventually unlocks three new temporary power-ups. In *Banjo-Kazooie* the player must unlock each type of ammunition, two different temporary power-ups, and special platforms scattered throughout the level.

The main effect of this multiplication of collectibles is that the player must learn to read and react to a much more complicated gamestate than *Mario 64*'s. The jigsaw puzzle pieces, or 'Jiggies,' of *Banjo-Kazooie* are most like Mario's power stars in that they are generally the hardest items to obtain and they are almost always rewards for specific objectives. Unlike Mario's power stars, however, finding a Jiggy does not eject the player from the gameworld, meaning that the player is free to pursue multiple Jiggies at once. Different jiggies will require different actions on the player's part however, and in order to complete these actions, players must often collect other items. Getting to a jiggy on top of a mountain may require flight, necessitating players A) learn how to fly from Bottles the mole B) find a flight pad, and C) collect enough red feathers to stay aloft and reach the jiggy. Another jiggy may require that the player shoot eggs at an object or enemy, requiring them to A) learn how to shoot eggs and B) gather enough eggs to shoot. Furthermore, collecting jiggies alone are not enough to proceed

through the game. The player must also collect musical notes to open “Note Doors,” as well as collecting Jiggies to complete the puzzles that open up new level segments. So sometimes a player will have to enter a level in search of notes, while other times the player will have to search for jiggies.

This splintering of function collection is a dilution of each item’s overall importance. In *Mario 64*, getting more power stars is directly corresponds to the player’s ability to unlock new parts of the hub. This dilution of individual item significance, paired with the game’s childish thematic layer, results in a less serious affect than *Mario 64*, even though neither title is particularly solemn.

This lack of solemnity alters the *Banjo-Kazooie*’s affect in a couple of ways. First, it grants the game a unique set of design principles. If we were apply the level building exercise learned in *Mario 64* to Banjo-Kazooie, we would have to make a few changes to our Noir-like level. We would obviously substitute Bowser’s minions for Gruntilda’s, but we would also have to pepper the level with animated inanimate objects, replace red coins with Jinjos, and we would also likely have to have Bottles the Mole teach players to use a new item or unlock a new ability (leading us as designers to consider what item or skill would be most appropriate for a noir level). A new transformation from Mumbo the witch-doctor may also be included if it seems relevant.

The general experience gameplay would still be comparable to the Carrollian dream of *Mario 64*, but the emphasis on collecting more items (with lesser significance) results in an experience that is less like an Easter Egg hunt, and more like a scavenger hunt, or even a trip to the supermarket. Each jiggy can be thought of as a meal requiring certain ingredients, which the

player must obtain and expend. While the buttons pressed and the way the player must press them are essentially the same in both titles, players must conceptualize and prioritize their actions in a different way to successfully modify, or ‘write in’ the gamestate. The skills and literacies that must grow the most from when transitioning from one title to another in the same genre are primarily semiotic recognition and metaphorical comparison.

The relationship between *Mario 64* and *Banjo-Kazooie* illustrates how gameplay literacies carry over from one title to another, and to a lesser extent, how player’s experience with titles of the same genre can ease or accelerate the metaphorical level of interpretation. Physical skills and basic hand-eye coordination require very little modification or translation. Players’ mental maps of the game require more extensive changes however, in order to be able to successfully manipulate the gamestate. By ‘successfully manipulate,’ I do not necessarily mean that players succeed at doing what the game encourages or expects them to do. If the player wants to die wide varieties of ways in Mario, or maximize his ammunition in *Banjo-Kazooie*, they will know how to accomplish this within the framework of the game. Furthermore, the player will know which experiences the game’s affect facilitates. A player looking for a cartoonish experience with more personality in the narrative will likely prefer *Banjo-Kazooie* over *Mario 64*.

My analysis also demonstrates the tremendous significance of the thematic layer on videogame analysis, and the wide range of artifacts and experiences that must be considered to accurately analyze videogame narratives. Although game mechanics primarily depend on variable counters, various collision detection relationships, rates of speed, and button presses, a player’s experience of a game’s content relies heavily upon the aesthetics, sound-design, and flavor-text presented, which all assign value to gameplay and to a players performance. To study

the full range of the thematic level's influence, I will apply my rubric to an entirely abstract game in the next chapter.

Chapter 4: Tetris, Abstraction and Thematic Interpretation

4.1 Introduction to Abstraction and Abstract Games

Games have a tremendous capacity to create metaphors through abstraction. In Chess, carved tiles on a wooden board become armies on a battleground. *Pong* creates Table Tennis with nothing more than two bars and a ball of light. *Red Dead Redemption* places players in vast desert landscapes with simulated flora, fauna and stunning sunsets. However, while these simulations all feature elements of abstraction, they are not considered “abstract games.”

Jason Begy provides a useful semiotic definition of abstract games as titles whose individual game objects do not function as iconic fiction-symbols. Rephrased, each individual game object does not represent something external to the game. Under Begy’s definition, abstract games can function as simulations, but in those cases, the visual appearance of each discrete game object is arbitrary.

These abstract titles are often likened to puzzles, and frequently explicitly labeled as puzzle games, since puzzles are often conceptual or abstract. Abstract and puzzle games present unique barriers and challenges to the interpretative process, particularly at the thematic layer, as most of our critical processes have been designed to address artifacts with explicit subjects or source systems. Concerning the interpretation of abstract games, Bogost writes (2009):

“A problem arises when we try to talk about abstract puzzle games critically. The truth is, it’s hard to perform thoughtful criticism on puzzles, because they don’t carry meaning in the way novels or films or oil paintings do. The peg solitaire set on the table at Cracker Barrel does not function as a religious text, for example.”

In order to thoroughly test the viability of my critical rubric, it is necessary to apply the rubric to games that employ varying levels of abstraction, as well as purely abstract games. As

Begy observes, “Abstract games are quite possibly the primordial game configuration” and “Any general account of how games can express and communicate ideas must be applicable to abstract games” (p. 13, 2010).

I will use my rubric to examine *Tetris*, the best-known abstract videogame. I will address questions concerning the relevance of cultural heritage, actual vs. authorial audience, and compare my findings to other famous interpretations of the game including Janet Murray and Makku Eskelinen’s. Next I will analyze how the use of abstraction in non-abstract games can be used to establish a specific thematic mood or character, by analyzing DOOM’s representation of game objects and inventory mechanics.

4.2 From Russia with Fun

Tetris was originally created in 1985 by Alexey Pajitnov and it has since become one of the most recognizable videogames in the world. The game is very easy to learn and plays on a wide variety of platforms ranging from pocket calculators, to personal computers and dedicated home gaming-consoles. For most players, a single play-through rarely lasts more than 5-20 minutes, making it ideal for rapid replay.

The object of the game is to arrange falling geometric shapes into lines to make them disappear. The shapes, called tetrominoes, come in a variety of shapes, each made up of varying combinations of four equal sized blocks. The player can rotate shapes and make them fall faster by holding down the down button on the directional pad. *Tetris* also features a rule called "naïve gravity;" which states that when a line disappears, remnant pieces of cleared blocks will not automatically fall into gaps that have been created.

The player scores points for every line cleared, and also receives a small amount of points for placing blocks by holding the down arrow. The player gains the most points possible

when he by completes four lines simultaneously, scoring a tetris⁶. A tetris can only be completed by using a straight tetromino, which introduces a risk-reward dynamic; should the player hold out for a straight piece and build the rest of his blocks ever-higher, or should he play things safe and clear shorter stacks of lines as quickly as possible?

For the purposes of this study, I will be discussing Nintendo and Bullet-Proof Software's 1989 release of *Tetris* for the original Game Boy⁷, which I played on a Game Boy Color. I will be discussing game type 'A,' starting from level 0. The game does not introduce any new rules or mechanics as play progresses, but the game escalates in speed after every ten lines are cleared. There are a total of 10 levels of escalation, starting from 0 and going to 9.

Tetris is a non-narrative, abstract game. By non-narrative, I mean that the software itself is not trying to tell players a story, or inviting them to explore a diegesis, or justify the gameplay with a contextual explanation. The blocks are simply falling, and you have to make them disappear. I believe interpretations that use narrative metaphors to describe the affect of gameplay are valid and valuable however, and that any completed game session can be described as a narrative.

The following chart outlines the interpretative factors that are present at the pre-play level of *Tetris*. As you can see the game does not exist in a thematic void.

<i>Tetris</i> Interpretation: Pre-play Level		
Gameplay Spiral	Thematic Spiral	Affective Spiral
<i>Anticipation:</i> The Game Boy uses four buttons and D-Pad input, and a cartridge format. The game is also 2-dimensional. Tetris is said to belong to the 'puzzle' genre, though it has inspired a sub-genre of its own, including other falling block titles like <i>Lumines</i> , <i>Kirby's Star Stacker</i> , and rising block titles like <i>Panel De Pon</i> .	<i>Anticipation:</i> Tetrominoes have become very iconic, allowing people to identify <i>Tetris</i> easily. The box and cartridge art both display falling blocks. No story or narrative frame is provided to give context to the gameplay. The box art (on both the NES and GameBoy boxes) announce the game's Russian origin, billing it as "From Russia with Fun!"	<i>Anticipation:</i> The simple graphical style and abstract nature afford the game a retro/arcade aesthetic. Those familiar with other falling block games will have a general idea of what to expect.

⁶ I differentiate here between the game, *Tetris*, and the act of clearing four lines simultaneously; tetris.

⁷ It should be noted that the game was originally released on IBM PCs several years before the Game Boy.

Like *Super Mario 64*, most people have heard of *Tetris* and most gamers (at present) have at least a general idea of how it works. The tetrominoes themselves are instantly recognizable, similar to the symbols used to represent chess pieces. This iconic aesthetic, paired with its accessible gameplay, lends *Tetris* a certain cultural gravitas. While I would not go so far as to declare *Tetris* the chess of videogames, it commands a similar sort of respect in the gaming community.

The general shape of tetrominoes and the manner in which their various appendages fit together is reminiscent of puzzle pieces, which likely contributed to *Tetris*' genre designation as a 'puzzle game,' despite the fact that the game is based on rapid spatial arrangement as opposed to traditional puzzle or problem-solving skills.

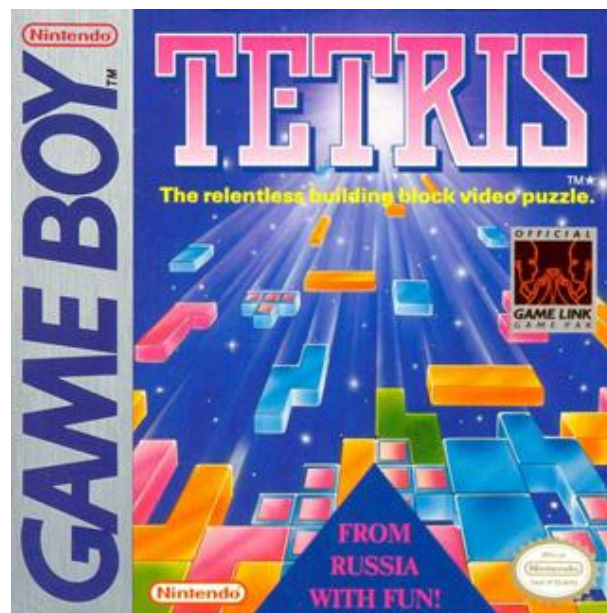


Figure 4.1: *Tetris*' Game Boy Box Art

A subtler, feature of *Tetris*' thematic layer is the game's Russian heritage. Both Nintendo's NES and Game Boy edition's box art feature a triangle with the expression "From Russia with Fun!" In 1990, Nintendo also aired a television commercial for the game featuring

Russian-accented, ushanka-wearing bears ⁸. This ‘Russianness’ was presumably accentuated because it was a tremendous novelty at the time of the game’s release. Even 25 years following the Game Boy game’s release, there are no widely known or instantly recognizable Russian principles of videogame-design. In fact, *Tetris* was the first piece of entertainment software to be exported from the U.S.S.R. This fact alone affords the game a degree of cultural and historical noteworthiness.

The final threshold between packaging and participation, the game’s title screen, greets players’ with a skyline of onion domes, similar to those found on Russian palaces and churches. This is the most overt reference to Russianness in the artifact itself. But does an awareness of the game’s cultural origin afford players an enhanced understanding of the game, and if so, is it essential to provide a valid interpretation of the game?

<i>Tetris</i> Interpretation: Fundamental Level		
Gameplay Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: The game presents the player with a shaft-shaped playfield on the left and status information on the right.</p> <p>Experimentation: The player learns to move tetrominoes, build lines, pause the game, toggle and read the preview window and status boxes. He also learns that blocking the appearance of new tetrominoes causes him to lose.</p> <p>Feedback: The game adjusts blocks, generates new tetrominoes and updates the preview window when a tetromino is placed, clears lines upon their completion, increases the speed level after every ten lines, ends play when new tetrominoes are blocked, and displays messages.</p> <p>Evaluation & Anticipation: The player determines whether the block fall speed and movement controls conform to his expectations and experience(s) and adjusts his play accordingly.</p>	<p>Instantiation: The game begins playing music (based on the player’s selection before the play-session begins) and presents the playfield outlined with small bricks and the status windows with white boarders.</p> <p>Perception: The player learns to distinguish each tetromino based on its general shape. He also learns which sound effects are neutral (block rotation, block placement) which are positive (line clearance, tetris, level-up) and which are negative (game-over).</p> <p>Feedback: The game registers the player’s actions with sound effects, graphics, and messages. The game also produces each type of tetromino with a distinct, consistent color and pattern.</p> <p>Evaluation & Anticipation: The player learns the meaning of specific sound effects and their valuation.</p>	<p>Instantiation: The game presents the player with a mineshaft playfield and abstract status blocks.</p> <p>Experimentation: The player learns the central risk-reward dynamic; trying to clear lines quickly versus building blocks higher to clear multiple lines or score a tetris. The player learns which specific block placements are viable, and which ones inherently constitute mistakes .</p> <p>Prescription: The game teaches the player to avoid gaps and to plan ahead while preparing for the next random block, and encourages players to react quickly.</p> <p>Evaluation & Anticipation: The play-til-you-lose conceit and high score record system impose the game an arcade-like affect. The player develops a broad Gamé to guide his play.</p>

⁸ The commercial may be viewed at <http://www.youtube.com/watch?NR=1&v=3Pk7unUQQ1o>

The fundamental level of *Tetris*' gameplay spiral is quite simple and in many ways its design facilitates rapid education and training. In Game Type A, instantiation is non-variable and the playfield is always static without segmentation or progression. There are also only two mechanical feedback loops that govern gameplay; the beginning of the play session, which comes full circle when the player loses, and the creation of a new tetromino, which ends when the prior tetromino settles on another block or the bottom of the screen.

As far as experimentation is concerned, the player has relatively few actions to learn. He can move and rotate tetrominoes, pause the game, and toggle the preview window on and off. All of these actions are exclusively mapped to a single button on the Game Boy's and they are grouped in a logical manner. The directional pad controls movement, the A and B buttons control rotation, and the start and select buttons (as per usual gaming conventions) control the 'non-diegetic' features of play.

The constant falling velocity of the blocks is also mostly consistent with players' natural experiences of gravity with one caveat: If a line is cleared and a segment of a tetromino is left behind, it will only fall the distance of the total lines cleared, as opposed to sliding into any gaps that may exist beneath the line (see figure 3.2). This feature, referred to as naïve gravity, makes it more difficult to completely clear the playfield and to avoid gaps while building lines. It also prevents the possibility of scoring a 'combo' by having one line clearance trigger another. The most complex and nuanced part of play is clearing lines and building a *Tetris*.

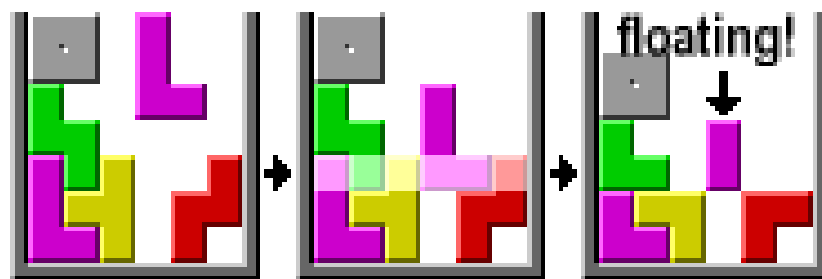


Figure 4.2: *Tetris*' Naïve Gravity Mechanic in Action

Tetris is unique in that it features a mechanic that directly encourages player anticipation. The play screen includes a preview window in the lower left corner that announces which type of tetromino is approaching next, and encourages him to think ahead when it comes to his building strategy. While there is an element of luck involved with what random block will occur after the previewed block, the feature encourages players to make more informed building decisions.

Glimpses into the future are inherently ‘interactive’ features even in analog artifacts. Premonitions, prophecies, and flash-forwards prime the reader to speculate. They are no longer simply receiving the plot as it comes, but building a schema of the plot’s structure and working out how the present moment will arrive at the future. Many times, these devices explicitly invite the audience to try and solve the plot as if it were a puzzle, while other times, they deliberately close readers’ minds to certain possibilities by giving them false assurances of what is to come. In Dickens’ *A Christmas Carol*, Scrooge’s encounter with the Ghost of Christmases Yet-to-Come presents the reader with a number of scenes that show how the world has changed for the worst. The reader can work out how Scrooge’s miserly ways and callousness contribute to the death of Tiny Tim, and why his own death not only goes un-mourned, but is received as a welcome relief for his debtors. Similarly, when we arrive at the story’s happy ending, we can see how his experiences with the spirits have changed his behavior.

The preview window in *Tetris* never deceives players, or locks players into a set solution to solving a puzzle, but rather invites them to consider all the various ways they can play with a given block. This is an excellent training tool, as it not only forces players to react to the game, but to proactively create new strategies for each type of block. These strategies not only allow players to address the current situation, but carry over to similar situations in the future. Flashbacks and memories can be used to produce similar and identical effects, but I will discuss them in greater detail in the next chapter when I discuss *Braid*.

The visual level of *Tetris*’ thematic spiral is fixed and extremely functional. Save for a brick-like border flanking both sides of the playfield, and the rough similarity between jigsaw

puzzle pieces and tetrominoes, the visual style is completely abstract. This uniform style makes for a very pure ludic experience, with no distractions from the gameplay and mechanics. While detractors might make the argument that the visual style contributes nothing to the experience, there are distinct functional advantages to the spare style. Each tetromino has variable patterns, which is extremely useful for distinguishing between mirrored variants of tetromino shapes. By the end of the fundamental level of gameplay interpretation, players will be able to distinguish tetrominoes by both their general shape (L-block vs. S-block), and by their pattern (right facing L-block vs. left facing L-block).

The audio aspect of *Tetris* thematic spiral is much more complex. While the sound effects are consistent like the graphics, the game's music is actually user-configurable. At the beginning of the first play session, the player must select between three types of background music, or silence. In subsequent play sessions, the player can rapidly start a new game using his prior selection of music, or he may exit to the game selection screen and select different music. All three songs were written for the Game Boy by Hirokazu Tanaka, but two of the songs are adaptations of famous classical and folk songs. *Tetris*' relentlessly catchy and now-widely known 'A-Type' music is based on the Russian folk song, Korobeiniki, and C-Type is based on an arrangement of Bach's French Suites, BWV 814 - Menuet. All three songs have a distinctly classical aesthetic to them, despite their relatively simple audio capabilities of the original Game Boy. Unless the player is familiar with these classical works however, he is unlikely to recognize A-Type music as a distinctly Russian song, or C-Type music as a French-themed work from a famous German composer. Such recognition could afford the game a sort of cultural cache, leading users to consider it a "higher" artifact than Pong, or even Mario. Conversely, they may regard the theme as an irritatingly repetitive derivation of Bach's work and be more dismissive of the game.

The title screen's Russian frame may lead the player to attribute a Russian heritage to all the background music, correctly identifying A-Type's cultural heritage, but mislabeling the other

two. In this case, the music is at least partially misread, but the player's comprehensive understanding of *Tetris* is not necessarily misunderstood. In fact, the very presence of musical selection—a uniquely video-ludic feature as films and television shows have predetermined scores— suggests that no specific type of music is essential for understanding or appreciating the game.

Regardless of whether or not the player correctly identifies each song's cultural heritage, the different songs each apply a different tone to the gameplay. All three songs loop, which is appropriate for the structurally indefinite and repetitious gameplay of *Tetris*. A-Type is the default musical setting, which may partially account for its popularity and recognition as the canonical tetris theme; the Tetris Company has actually copy-righted the commercial use of Korobeiniki. The B-Type music is more pompous than A-Type with a percussive, almost militaristic rhythm. Compared to the other two fast-paced themes, C-Type is quite slow and somber. The different rhythms may guide block placements in different ways, similar to the way that house music (which is also generally repetitive and devoid of coherent lyrics) sets the pace for dancing in night clubs. Finally, playing without music allows the player to focus all of his attention the sound effects and gameplay, further simplifying the game's already spare thematic level.

While it has been said that *Tetris* has no textual information, this is not actually true, at least not for the Game Boy edition of the game. Most of the text simply labels the player's various scores (total lines cleared, speed level and points). There are important examples of non-diegetic text, however. When the player inevitably loses the game, he is treated to a message: "GAME OVER PLEASE TRY AGAIN ♥." This may seem like a casual detail, but the phrase has a considerable effect on the game's over-all tone. Instead of mocking the player's efforts, the game is explicitly encouraging, and even affectionate (as denoted by the heart) toward the player. The game does not even say that the player has lost; simply that play has ended.

If the game said “GAME OVER YOU LOSE” it would explicitly establish a game as one that could not be won, since the only way A-Type Mode can end is for the player to fail at clearing the top of the screen. In *Procedural Rhetoric* Bogost explains how political games often illustrate dysfunctional social and political systems with unwinnable mechanics. These situations do not represent failure themselves (as the player must first participate to lose), but rather a “Rhetoric of Failure.” Usually these situations can be viewed as tragedies. But *Tetris* never tells the player he lost, mitigating this tragic mapping of meaning to play.

Admittedly, a player will likely conclude that the words “game over” are equal to defeat, as this is a long established convention in gameplay. Furthermore, if the player is attempting to score as many points as possible, or to simply sustain play, it is safe to assume that a game over will always result from a mistake in block placement or judgment. And tragedy maps particularly well to certain recurring emergent narratives in *Tetris*.

If a player builds his blocks ever-higher hoping to score a tetris with an I-block only to lose before the I-block arrives, he might consider the situation tragic. We could take this analysis a step further, and conclude that hubris (the ancient-standby of tragic flaws), was the cause of his defeat. In order to score a Tetris, the player must continue to build an increasingly perilous and unmanageable edifice, based on the assumption that he will have enough skill to clear the lines he has saved. This is similar to waiting for a specific card in poker, except that instead of relying solely upon luck, he is gambling that his hand-eye coordination will be sufficient to overcome whatever unmanageable pieces the game throws at him. The player is more in control of his fate in Tetris, as the game will repeatedly present him with other blocks that he can use to survive and clear a few lines, at the expense of denying himself a tetris. This dynamic presents the player as an inverted Daedalus: rising ever higher, only to be trapped at the top of the world.

I am being slightly facetious and melodramatic. Since there is no form of thematic progress in *Tetris*’s Type-A Mode, the only thing the player loses through his ‘hubris’ is the ability to earn a higher score. Consequently, the loss will only be genuinely tragic when the

player comes close to beating his highest previous benchmark, only to fail. In all the other cases, the falls that result, no matter how prideful their causes are, will be quickly forgotten, and amusing rather than cathartic.

Again, this is due in part to the game's gentle and encouraging Game Over screen. But it is also hinted at by the inherently ephemeral nature of the game's mechanics. The constant elimination of the tangible, and therefore physical, tetrominos, could further be understood as an anti-material sentiment; the casting away of earthly goods in exchange for a higher, physical score. While this affect is decidedly non-western, it is not distinctly Russian. The fundamentals of *Tetris* are truly universal, and prolonged play can yield a Zen-like affect.

<i>Tetris</i> Interpretation: Secondary Level		
Gameplay Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: Same as previous. Assessment & Reaction: The player begins to develop block placement and Tetris-building strategies. He decides whether to clear blocks quickly, or build for higher scores based on prior experiences. The player also learns to use the preview screen to plan his building strategies. Feedback: Same as above, though the player will definitely encounter escalation (through speed increases); most likely several times in each play-session. Evaluation & Anticipation: The player has experienced all the common recurring gameplay scenarios (waiting for a line block, unexpected/difficult to use block appearance). The player may also begin to experience the 'Tetris Effect.'</p>	<p>Instantiation: Same as previous. Perception: The player learns to distinguish tetromino's by color and pattern as well as their basic shapes (allowing for quicker distinction between mirrored tetrominoes). Feedback: Same as previous Evaluation & Anticipation: In addition to assigning value to every sound effect, the player may come to characterize certain tetrominoes for their utility, or difficulty of use (S tetromino's are 'evil' while I tetromino's are 'noble').</p>	<p>Instantiation: Same as above Assessment & Reaction: The player experiences runs of bad luck (strings of several hard-to-use or undesired blocks) and starts to recognize opportunities (blocks that work well together). The player's Gamé is robust enough that he knows when it is safe to build for a tetris and when it is essential to clear lines quickly. Prescription: Continued play increases the emphasis on improving player reaction time, and developing consistent building and gap-recovery strategies. Evaluation & Anticipation: The player will likely gauge his success in terms of completed play sessions as opposed to individual tetromino placement and he will likely measure his success in relation to prior high scores.</p>

Given how simple *Tetris*' gameplay is, the player might reach the secondary level of interpretation after only a few play sessions. Players will have learned basic line-building principles for all tetromino shapes, and they will learn more advanced maneuvers, like sliding

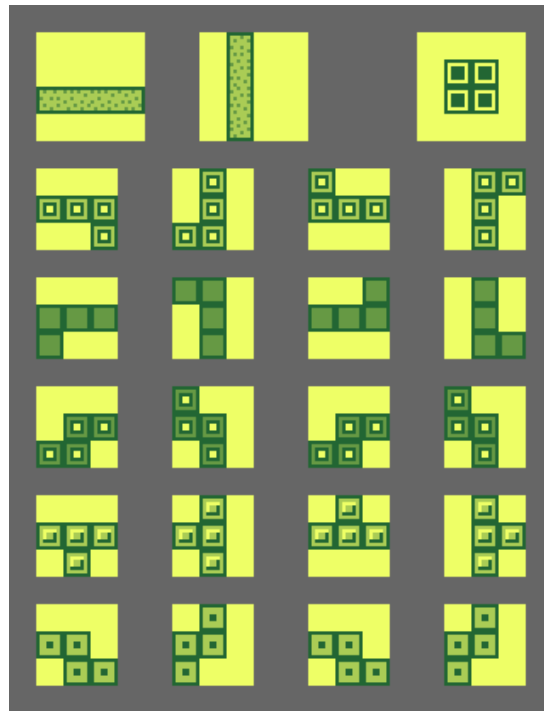


Figure 4.3: All Tetrominoes from *Tetris* Game Boy

tetrominoes into gaps during the split second before the block ‘settles’ on another block or the bottom of the playfield. The player will also likely to pull blocks down into place rather than waiting for them to fall. Finally, players will learn to adapt to strange occurrences, like consecutive appearances of the same type of Tetromino, and how to recover from multiple gaps and mistakes.

As the player starts pursuing mastery of the game, he may begin to characterize certain Tetrominoes based on his experiences up to that point and current skill level. S-shaped Tetrominoes are often difficult to score with, and poor placement can easily cause unintentional line-gaps. Conversely, I-Tetrominoes are the only way to score a tetrtris, and they complete nearly half of a line when placed lengthwise. Beyond these characterizations, there is next to no thematic analysis that occurs.

These characterizations pair with the player’s natural experience of emergent narratives. As mentioned earlier, the scenario of waiting for a I-block to receive a tetrtris, only to be undone by other unwanted blocks maps readily to tragedy. In this situation, the block that either breaks

the player, causing him to forgo his tetris, or defeats him outright could easily be viewed as a villain. By contrast, if the player is about to lose, only to gain the exact tetrominoes that he needs to complete his current design, the tetrominoes could be viewed as saviors.

In terms of affect, the game will repeatedly prescribe precise block placement, and increasingly rapid reaction times. The player will recognize mistakes immediately as he makes them, rather than becoming aware of them by their consequences. This results in a change of the way he evaluates himself. Rather than evaluating his performance move-by-move, the player will assess himself based on completed play sessions. This type of comprehensive, play session-based self-evaluation is further encouraged by the game's high score system, which records the 3 highest scores earned on the cartridge.

In *Tetris* the Reflexive Evaluation & Comparison process often manifests itself in very unusual and ostentatious way. After playing the game for a sustained period of time, many players see after-images of tetrominoes falling when they close their eyes or in their head. Others see real world objects as if they were divided into four equally sized blocks like Tetrominoes. Both of these are symptoms of what is called the "Tetris Effect," (Earling, 1996). Though the effect is not exclusive to *Tetris*, or even to videogames (it can also occur while driving or working with spreadsheets), it generally stems from behavior featuring simple visual representation and repetitive interactions.

I say that this marks the beginning of the translational process because the player does not involuntarily super-impose the game system onto the world around him until he has thoroughly internalized it, so it cannot occur at the fundamental stage of interpretation where the player is still assembling a complete Gamé. Furthermore, looking at the world through tetromino-tinted glasses, even involuntarily, forces the player to see parallels between the game and reality, moving him beyond interactions with the game world.

A similar, though not strictly analogous, effect often occurs in literary analysis when the reader is searching for textual evidence to support a specific reading. While lecturing on the challenges of psycho-sexual analysis in relation to Faulkner's *The Sound and the Fury*, Richard Godden (American Literature of the 1920s, UCI, Spring 2009) used the example of searching for innuendo as a perilously slick slope for interpretation; since sexual metaphors are so prevalent in language, it is difficult to stop finding them once you start looking for them. It easily becomes difficult to discern literarily significant instances of innuendo from incidental ones. Certain simplistic Marxist and Feminist readings are similarly prone to totalize the interpreter's world views, as economics and sociopolitics and gender roles are similarly pervasive in language.

While most of the interpretative connections and observations produced by totalizing conceptual framework are tenuous, chimerical, or distracting, these all-consuming perspectives generally subside, and lay the groundwork for more deliberate and thoughtful comparisons. The same is true of the Tetris Effect. The effect generally subsides as the player becomes more accustomed to the game.

<i>Tetris</i> Interpretation: Tertiary Level and Post-play		
Gameplay Spiral	Thematic Spiral	Affective Spiral
Instantiation: Same as above. Prediction & Reaction: The player has several building strategies for each Tetromino in different situations. His reactions are largely automatic instead of deliberative. Feedback: Same as above. Reflexive Evaluation and Comparison: The player expands his Gamé to include unusual situations. The player has likely experienced the 'Tetris effect' at some point.	Instantiation: Same as above. Perception: The player recognizes all sound effects and tetrominoes by shape and pattern. Feedback: Same as above. Reflection: The game does not recommend any thematic analysis occurs at this level, though the player will draw parallels between the emergent narratives and his own experiences.	Instantiation: Same as above. Prediction & Reaction: The player recognizes several procedural narratives, such as waiting for a specific tetromino, correcting mistakes, etc. Prescription: Same as above. Translation: The player recognizes Experiential metaphors like Murray's "...Overtasked lives of Americans in the nineties..." They may notice a Zen or anti-materialist sentiment reflected in gameplay.

By the third level of interpretation, the player will have experienced all of the game's major emergent narratives, as well as several unusual occurrences, like completely clearing the play field (a difficult task), or making a comeback from multiple gaps.

Each of these completed play sessions can be described as completed narratives. By themselves, these summaries will not make sense to those who have never seen or played *Tetris*, but these experiences can easily be translated to other personal experiences that impose a similar affect on the player. The player can then use these connections to describe the game to an outsider. In this fashion, the affect of a game can be translated into other people who have encountered experiential narratives with similar affect. Players may also experience real-world scenarios that remind them of their experiences with *Tetris*. While working at a Barnes and Noble, I was frequently called to process book returns, which involved packing books of various sizes (tetrominos) into boxes of varying sizes (lines), with as few gaps as possible.

In *Hamlet on the Holodeck* Janet Murray famously described the affect of *Tetris* using a comparable work-place metaphor:

“The game is a perfect enactment of the overtasked lives of Americans in the 1990s—of the constant bombardment of tasks that demand our attention and that we must somehow fit into our overcrowded schedules and clear off our desks in order to make room for the next onslaught.”

Murray’s metaphor is not perfect. It does not describe *Tetris*’ puzzle-like visual aesthetic or account for the vertical spatial mapping of the game. In, “The Gaming Situation,” Markku Eskelinen vehemently objects to Murray’s interpretation, accusing her of “projecting her favorite narrative content on to the game” (Eskelinen, 2001) and preventing us from learning the game’s constituent features. While it is true that Murray’s office-based metaphor is super-imposed onto the software, it does an excellent job of describing how the game makes the player feel. This explains how this thoroughly abstract title is relevant to our experiences of the real world, and by extension, it helps account for why *Tetris* is so immensely popular in the western world despite its eastern origins. This is what good criticism does, regardless of the medium.

Contrary to Eskelinen’s insinuations, Murray is not labeling *Tetris* as an artifact from the American 90s, but rather an artifact that speaks to the American experience of the 90s.

Furthermore, Eskelinen's own phenomenological analysis of *Tetris* does not address the game's 80's soviet lineage either. His table of temporal relations, while accurate, is an obtuse deconstruction that does not describe the experience of *Tetris* in a new context that will explain the game to those who have not played it, or expand upon what a player could learn by simply playing the game.

Eskelinen's objections to Murray's reading stem not only from a disagreement over the role of games, as cultural artifacts, but from the role of interpretation. Murray's approach satisfies literary critic, Terry Eagleton's desire to "show the text as it cannot know itself," (Rabinowitz, 1987) providing a perspective beyond what the 'author,' would have imagined or intended. Eskelinen's stance can be summarized by his generalization that "in art we might have to configure in order to be able to interpret whereas in games we have to interpret in order to be able to configure, and proceed from the beginning to the winning or some other situation." While it is true that we must determine how the game objects interact with one another in order to play the game, interpretation does not end with mechanical deconstruction and description. To understand why games are relevant and important to our lives, we must describe their affect, and to accurately describe the affect of the game, we must account for how the experience of play influences us, and interacts with other prior experiences to understand. Although games themselves are more than systems for generating stories, they do tell stories and we cannot say that we understand them if we ignore the stories that they tell.

4.3 Abstraction and *DOOM*

While many analog games feature elements of abstraction, these elements are inescapable for videogames that are not themselves, completely abstract, like *Tetris*. Abstraction is perhaps most apparent at the thematic level of play, with images on a 2-dimensional screen simulating 3-dimensional space, and complicated objects being rendered by a collection of pixels and/or

polygons. In the early era of videogame design, these abstractions were necessitated by the constraints of available memory, processing power, and programming techniques. More recently, designers have learned to carefully structure a game's aesthetic to conform to its necessary abstractions. Gearbox software opted for a cell-shaded look to help mitigate the technical requirements for *Borderlands* and simultaneously managed to distinguish the title from its realistic-looking competition. It has also become increasingly common for designers to select specific retro-aesthetics to evoke a specific affect of gameplay. Capcom produced *Mega Man 9* using the same sprites and graphical style of the first titles in that series as a conscious design constraint (and to capitalize on the nostalgia of its now adult player-base).

Abstraction extends well beyond the thematic layer, however. Actions in videogames are frequently simplified or streamlined for the sake of technical constraints and enjoyable gameplay. One common example of a gameplay abstraction is the elimination or invalidation of enemy game objects following their defeat. Many games completely clear enemy sprites from the screen after they are defeated. Often times their absence is diegetically excused with an explosion. Other games leave enemy bodies behind but remove collision detection. In both cases, the player can completely ignore defeated enemies in terms of movement and combat awareness.

Both mechanical and thematic abstractions have a strong impact on the game's affect, as they control the tone of the game's reality. Abstraction in videogames is comparable to the willing suspension of disbelief required by speculative fiction; in both cases, audiences are encouraged to ignore practical lacunae and apparent logical hang-ups. As Murray points out however, suspension of disbelief is "too passive a formulation even for traditional media." (p.110). In many cases, audiences actively "create belief" in the diegesis out of the desire to experience immersion. In exhaustively detailed, open-environment games like *Skyrim*, and *Red*

Dead Redemption, players may assume that their heroes find time to eat, drink and use the bathroom in between scenes.

I should mention that I would not go so far as to say that suspension of disbelief should always be re-considered as the active creation of belief. In certain narratives characters behave unrealistically (investigating strange noises in horror movies) and certain games use preposterous abstractions (enemies appearing out of thin air without explanation) forcing readers to hold their skepticism in check. One could argue whether or not these situations constitute poor story-telling and game-design, but there is no denying that audiences do occasionally forgive a given fiction its logical fallacies in the name of progression. Not every reader or player is eager to expend the mental effort to fill-in conceptual whitespace.

That said, I believe that certain types of abstraction encourage Suspension of Disbelief, while others encourage the active Creation of Belief. To illustrate my point, I will examine the fundamental level of interpretation in the seminal first-person shooter (FPS) *DOOM*.

Originally developed by id Software and released for the PC in 1993, *DOOM* was a landmark title in the FPS genre. Although it was not the world's first FPS, it is widely credited for popularizing and establishing the genre. In fact, in the first few years following *DOOM*'s release, the FPS genre was referred to as "Doom clones." Like *Tetris* and *Mario*, it is a game most videogamers are aware of, if not personally familiar with. Since its original launch, *DOOM* has been ported to numerous different platforms (most recently the iPhone) and received several updates and special releases. I will be discussing the 2007 *Ultimate DOOM* release currently available from Steam for the PC.

DOOM is not an abstract game, though the mechanics and thematics of the game both feature many prominent abstractions. I chose *DOOM* to act as both a counter-example to the type of absolute abstractness represented *Tetris*, and to function as bridge back to *Mario 64* to convey the broad range of abstractions that can exist in the video game medium. While *Tetris* forms a completely abstract world, *Mario* was designed to feature embodied gameplay and navigation that was as close to reality as possible, to ease players' adaptation to a third dimension. *DOOM* functions as a middle ground, as it features the embodiment of a first-person perspective, and a convincing facsimile of a three-dimensional environment, paired with abstract elements, such as a minimap, and abstract icons that represent concrete, numerical concepts such as (health, ammunition, armor and weapon possession). In a way, *DOOM*'s world feels less consistent than either *Tetris* or *Mario*. Game objects in *DOOM* hover in midair, and display a flat 2D sprite (which reacts inconsistently to the player's perspective) as opposed to the (almost) purely 3D models of *Mario 64* that react realistically to perspective, or the completely and consistently 2D gamestate of *Tetris*. There is a subtle incongruity in *DOOM*'s collision detection system, between the realistic walls and enemies that push the player back and the ethereal objects that magically merge with the player as he glides through them.

Understanding the game's frame narrative is not vital to understanding the gameplay, and the narrative has a minimal in-game presence. In fact, the premise of the game was originally delivered through the game's instruction manual, and modern, digital editions of the games do not provide the player with any backstory at all. Players are placed in the role of a nameless space marine stationed on a research facility on Mar's moon, Phobos, which has become overrun by demons. No date is provided, but we are left to assume that the story occurs in the future based on the science-fiction setting. Generally, most abstractions become apparent at the

Fundamental Level of Interpretation, when the player is learning the rules and controls, so I will only focus on that level analysis.

<i>DOOM</i> Interpretation: Fundamental Level		
Gameplay Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: Instantiation is both Segmented (levels on a map screen) and Progressive (as the player navigates each level).</p> <p>Experimentation: The player learns to move, aim, shoot, change weapons, use switches and open doors. Players of modern FPSs may be surprised to learn 1) that you cannot look up or down, or aim independent from navigation 2) there is no reload system 3) no cover system, and 4) that they can carry an unlimited number of weapons.</p> <p>Feedback: The game registers damage using numbers and sound effects. Damaging enemies yields injury and death animations and replaces their bodies with non-interactive corpse/gore graphics. As play progresses, Escalation occurs in the form of increasingly powerful game objects (enemies, firearms and pick-ups) and number of opponents.</p> <p>Evaluation & Anticipation: The player learns that shooting and movement is simplified compared to real-life and more recent FPS titles. Skills and experience from franchises like <i>Duke Nuke'Em</i>, and <i>Serious Sam</i>, will readily translate to <i>DOOM</i>.</p>	<p>Instantiation: The game plays midi music from the start, and populates the level with enemies and pickups.</p> <p>Perception: The player learns to identify positive game objects (pick-ups), negative objects (enemies) environmental game objects (switches, doors, poison floors) and the environment itself. The player also learns to distinguish between the different subclasses of these object types, or in the case of environment, different aesthetic styles.</p> <p>Feedback: The game renders combat with sound-effects, color tints, animations, and draws the game environment according to player progress through it. The portrait at the bottom of the screen suggests player responses to in game-actions; the acquisition of new firearms is rewarded with a malicious smile, whereas injuries are recorded with wounds.</p> <p>Evaluation & Anticipation: The player learns to evaluate the world in terms of survival (is this harmful? Will this help me?) and expedient navigation (getting keys is always a priority because they are almost always required to finish the level)</p>	<p>Instantiation: The environment is uniformly hostile and violent. The promise of increased firepower and scattered restorative items are the player's only boons.</p> <p>Experimentation: Players learn that their agency in <i>DOOM</i>'s world is limited to violence, and strictly utilitarian interactions (picking things up and flipping switches).</p> <p>Prescription: The game prescribes twitch reflexes over advanced tactics or stealth. Accuracy is prized, but primarily based on pattern recognition as opposed to preparation and careful aiming. The emphasis on expediency is accentuated by the presence of a "PAR" time score at the end of each level.</p> <p>Evaluation & Anticipation: The player learns to expect increasingly hostile and dangerous scenarios and address them with an increasingly large and powerful arsenal of weapons.</p>

Combat and movement in *DOOM* feature a number of abstractions. The most prominent abstractions pertain to navigation; players cannot look up or down, jump or crouch, or aim with greater precision than turning left or right. Shooting at and damaging enemies may seem very simple when, as George Bell's damage guide illustrates, it is actually quite complicated. These abstractions invoke a focused ludic experience and a high-paced affect, but they also obviously beg a suspension of disbelief as opposed to the active creation of disbelief. Any explanation as to

why the player's space marine cannot look up, or crouch, or shoot in a direction he is not facing with his body would come across as absurd. It could be argued that these disparities are at odds with the game's sense of immersion.

Another obvious mechanical abstraction that begs players to suspend disbelief is the space marine's ability to collect and carry an entire arsenal of heavy weaponry (including a shotgun, a chain-gun, a rocket launcher, two different types of energy emitting weapons, a side arm and a chainsaw for good measure). Players can actively concoct diegetic explanations as to how this is possible. The research experiments on Phobos and Deimos were experimenting with spatial warping technology before they were attacked by demons, so it is possible that the marine has some kind of dimensional pocket to carry his armaments. Such a reading raises more questions than it answers however: How does he fuel the pocket? Why can't he use the pocket to solve the puzzles he encounters?

Thematics and Mechanics come together for *DOOM*'s abstraction of enemy death. enemies do not completely disappear, their game-objects are replaced with non-interactive corpse and gore graphics. This is obviously an abstraction from real world combat, but also an abstraction compared to more recent titles like *Halo* series (where enemy bodies may be attacked or moved by explosions) and the *Metal Gear Solid* series (where enemy bodies can be recognized by living enemies, raided for additional supplies, or hidden away by the player). Despite the non-interactive nature of corpses (which effectively become part of the scenery as opposed to actual game-objects) this abstraction encourages the Creation of Belief as opposed to the suspension of disbelief. In *DOOM*'s ultra-violent world, gore is not only thematically appropriate but essentially mandatory to fit the rest of the game's tone. Furthermore, a dead enemy is no longer a threat to the player (and consequently, an object without any agency in

DOOM's world), and the player can easily imagine his marine stomping directly through the remains of his foes unfettered.

The iconography of *DOOM*'s pick-ups also bears comment. The overwhelming majority of game objects in *DOOM* are represented by uniform icons; there is never any visual variation between the item represented and the item's function. One Stim-Pack looks and functions like every other Stim-Pack, a Health Boost always looks like a Health Boost; etc. More importantly, many of these icons were chosen to function as concrete symbols of abstract game values (like armor and health). The result is an abstract style of representation that inspires Creation of Belief with some items, and the Suspension of Disbelief with others. Armor Bonuses are represented by tan helmets with glowing green eyes. While it is reasonable to assume putting on a single helmet would give the player extra armor, the idea of collecting helmets to gain protection (or wearing them in a stack) is comical. This abstract representation of extra armor inspires suspension of disbelief; we are discouraged to consider how the helmets provide health. By contrast, Health Bonuses are represented by potion vials of blue liquid. It is reasonable to assume that this elixir, through some kind of infernal or scientific magic, could give the player extra health and that the amount of health he gains is directly proportional to the amount he drinks. The Stim-Packs, Med Kits and Body Armor, and Spiritual Armor pick-ups also function in belief-building ways, though they are not abstractions. Med Kits and Stim-Packs cannot be used to heal the player beyond 100% health, just as medicine in real life cannot make somebody healthier than usual. Similarly, normal body armor can only give the player 100% protection, while Spiritual armor can afford the player an additional 100% protection, presumably through divine means.

The abstractions in *DOOM* call attention to a unique tension present in game design: crafting abstractions in a way that create a more focused gameplay experience and technically

feasible experience without taxing gamer's suspension of disbelief. It is interesting to consider which of these priorities should take precedence in game design; creating a diegesis that is logically sound and conceptually immersive, or creating play mechanics that are engrossing and accessible. These two goals are not necessarily opposed, as evidenced by the logically coherent representation of Health Bonuses as potions, and the non-interactive enemy corpse graphics.

Although abstract games and abstract elements of gameplay are defined by their representational arbitrariness, the thematic spiral of interpretation is one of the most affectively significant aspects of their interpretation. In completely abstract games, seemingly arbitrary graphical representations (thematic elements) are often essential to core gameplay (mechanical elements), as illustrated by *Tetris*' tetrominoes whose form is essential for the game to function. Other thematic concerns, such as the game's cultural origin, and musical accompaniment, are of secondary consideration to graphical elements that directly correspond to mechanics. Elements of mechanical abstraction, like *DOOM*'s simplified movement, shooting controls, and inventory rules demonstrate the converse relationship: how specific mechanics can impair or otherwise shape a player's understanding of the game's thematic elements (the space marine exists in a fictional world where he cannot look up or down). Finally, the use of iconic representation can simultaneously inspire suspension of disbelief, or the active creation of belief.

Chapter 5: *Braid*, Metaphor and Alternate Interpretations

5.1 Introduction to Metaphorical Play

The Tertiary Level of the interpretive spiral naturally segues into metaphor-making, even when the source artifact is not purposefully designed to be perceived as metaphorical. I have already demonstrated this with *Tetris* and *Mario 64* by demonstrating their parallels between office work and themed spaces respectively. It is still fairly uncommon for the mechanics and theme of mainstream videogames to be designed with explicit metaphors in mind, but as the medium matures, I believe that metaphorical game design will become increasingly prevalent. One clear indication of this trend can be seen in the growing popularity of the “Serious Games Movement,” which aims to use games as educational, social or political tools. News Games are another example, serving as a means conveying, simulating, or commenting on the news in addition to functioning as a game. Although serious and news games are not necessarily metaphorical, their experiences are frequently intended to function as a metaphor for something else, such as practice with a given task or a fresh perspective on complex issues.

A game does not need an agenda beyond entertainment in order to be considered deliberately metaphorical, of course. Konami’s *Silent Hill* survival-horror franchise features a game world that is split across two different dimensions; one that is mostly benign, and a hellish environment populated by Freudian nightmares. The latter environment is intended to be a dark mirror of the protagonist’s psyche, and the player’s experience becomes a metaphor for battling one’s inner demons. The series in general and the second installment in particular touches upon taboo themes like infidelity and rape through the use of specific enemies as visual metaphors. 2K

Games also garnered great acclaim with the release *BioShock*, a first-person-shooter that was heavily influenced by Objectivist philosophy. The game's setting was a fanciful entrepreneurial dystopia that was inspired by the ideals of philosopher and author Ayn Rand. The game's narrative also featured a plot-twist that presented the player's avatar as the tool of another character, functioning as a commentary on exploitation and objectification, and as a postmodern wink with the game effectively 'playing' the player. *Shadow of the Colossus*, developed by Sony Computer Entertainment's Team Ico, has a similarly metaphorical hook that invites player's to question their mandatory behavior. As the player slays colossi in his seemingly noble quest to save a stricken lover, the music and death animations of colossi will likely inflict guilt. The game's narrative later parallels this organic guilt when the player's character is ultimately twisted into an explicitly evil entity. All of these titles were chiefly designed to function as entertainment artifacts, as opposed to political or educational platforms.

Given the tremendous praise they have received, I believe it is important for my rubric to account for videogames that are designed to be appreciated and understood at a metaphorical level. It is also my hope that my rubric will assist game designers who are trying to understand how and when metaphorical interpretation occurs throughout the process of interacting with an artifact.

For my third example of the interpretive spiral, I will be examining *Braid*, which is perhaps the most often-cited example of "videogames as art." *Braid* is almost aggressively metaphorical, featuring audio/visual, narrative, and experiential metaphors in its gameplay. In addition to showing how the interpretive spiral can analyze metaphors, I also demonstrate that my model can be used to say something new about a title about which a great deal has already been said.

5.2 Other Castles

Braid's pre-play level is different than the other games I have discussed for several reasons. The initial commercial release of the game featured virtually no advertising. The overwhelmingly positive critical reaction to the game, which at times bordered on hyperbole, allowed the game to develop a cult status very quickly. The first version of *Braid*, with non-final art was finished in December 2005 and it won the game design Independent Games Festival award at the 2006 Game Developers Conference. This positive reputation preceded the title's initial public release on Microsoft's Xbox Live Arcade service for the Xbox 360 where it was met with nearly universal and opulent praise. The title's tremendous success drew attention to the independent (or "indie") game design scene and helped establish many of the values and aesthetics associated with the indie game design movement.

This is partially in thanks to vocal activism by *Braid*'s creator, Jonathan Blow. Blow intended *Braid* to function as a reaction to the mainstream videogame industry, and certain prevalent game-design practices that he felt were creatively bankrupt, and in some cases, immoral and damaging. While developing *Braid* and in the months following its release, he ran a design blog explaining many of his design decisions and responding to the criticism and praise the game received. Blow also gave a number of lectures explaining his stance on the game industry. Blow's criticism is significant and relevant to the interpretation of the game, because certain aspects of *Braid* are designed to reflect his principles. Those who have read or heard Blow's lectures will be confronted with specific examples of his design philosophy as they play the game, and those who are sufficiently impressed by the game may be inspired to look up his lectures and interviews, which I will discuss below.

Given its critical reputation circulated through the internet, most avid video-gamers (at the time of this writing) have heard of, or read about *Braid* if they have not played it themselves. It is also likely that those who have heard of it will have also heard or read that it is a platforming game featuring temporal puzzles. Those players who have not heard of *Braid* would be able to glean the game's theme of temporal play by looking at its cover art, which features a broken hourglass whose sands have been sculpted into a castle—if they ever see the cover.

Traditional notions of advertising, packaging and cover art are rather anachronistic when applied to, *Braid* however, because unlike the other titles I have examined, it has been released exclusively through digital distribution services like Xbox Live, PlayStation Network, and Steam. Some of these services, like Steam, never actually display the game's "cover" before the player purchases the game; in fact, the cover shown on the PlayStation Network and Xbox Live is never displayed in gameplay.

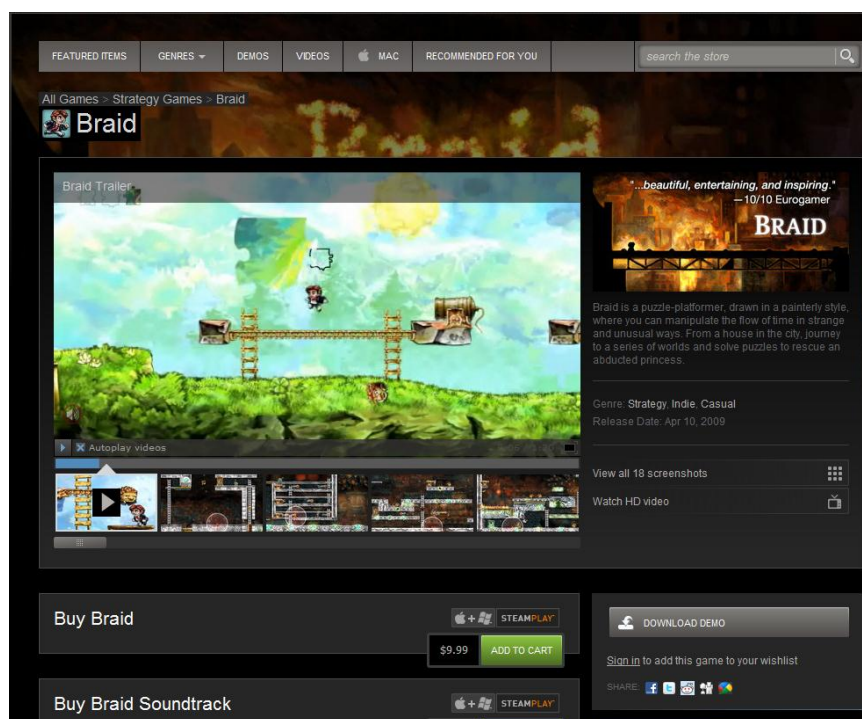


Figure 5.1: *Braid*'s Sale Page on Steam

Many of these services categorize titles by their genre, provide written summaries and bullet point features, list positive reviews and occasionally feature videos of gameplay or even offer downloadable demos.

Despite its lack of publisher and very sparse advertising budget (which primarily consisted of online banner ads), the online-only presentation of *Braid* nearly ensures that players have the opportunity to learn as much about the game as they could by considering the game in a physical store. In fact, the availability of demos actually allows players to begin the fundamental level of interpretation prior to purchasing the product, similar to the way that readers may browse through a book in a bookstore.

Another way in which digital distribution influences players' interpretation is the reduced cost of the game. Digitally distributed titles cost less than physical releases, and the amount of money a player spends on a game will likely shape their expectations of the experience. While the lower price-point is not indicative of a lower-quality release, it does suggest that the game may be shorter than titles distributed by a publisher, or that it is more likely to feature 2-dimensional graphics as opposed to 3-dimensional graphics. Both of these assumptions are true of *Braid*.

These factors combine to provide players with a very accurate initial impression of the game. The primary interpretative 'blind-spot' of the pre-play level of *Braid* is the game's story. Steam mentions that the game features a nonlinear story, and that the game "provides real-world metaphors for you time-manipulations," but Tim, the game's protagonist remains nameless, and

the goal of his quest is never mentioned. In a sense, Tim is an anti-mascot. His identity is hidden from the player rather than leveraged to brand or promote the game.

<i>Braid</i> Interpretation: Pre-play Level		
Mechanic Spiral	Thematic Spiral	Affective Spiral
Anticipation: Players will expect a platform game featuring temporal puzzles; specifically those relating to the ability to rewind time.	Anticipation: The cover art suggests the game's theme of time (though not its narrative), and the hand-painted graphical style of the actual game. Word of mouth compensates for a lack of traditional advertising. Overwhelmingly positive critical reactions may pre-dispose players toward skepticism, or set expectations unreasonably high.	Anticipation: Players will expect a more sophisticated and artistic gameplay experience with an unconventional narrative.

Depending on how much of the supplementary material the player reads or plays, the Pre-play level of *Braid* may prime players to treat the game differently. The unanimous, ebullient praise of critics may make players skeptical, or set the bar of expectations unreasonably high. Notifying players of the game's metaphorical nature may encourage reflection or scrutiny.

Braid does not have a tutorial that stands distinct from the rest of the game, like *Banjo-Kazooie*'s, but the beginning of the game is carefully designed to prod new players in the right direction. The game begins with the player standing to the left of the screen in an orange and black urban environment. White text appears on screen encouraging players to move using the control stick. As the player moves to the left, keeping consistent with the platforming conventions established in *Pitfall* (and reinforced by Mario, Sonic and countless others), he will arrive at a house which serves as the game's hub.

Like *Mario 3* and *Mario World*, *Braid* features Progressive and Segmented instantiation connected by a hub. However, this hub, a house with several rooms and a stretch of street

outside, is cast from the same mold as *Mario 64*'s Castle as opposed to the abstract, over-world maps of *Mario 3* and *World*. The player controls Tim as he would in the actual game levels, which are accessed through doorways in six of the seven rooms.

In between the hub and the game's levels, there are cloudy lobbies containing a series of green books resting on tables. These books convey the game's narrative through plain text. The first of these books informs us that the player's avatar name is Tim, and that he is trying to reunite with a Princess who was abducted by a monster, because of mistake that Tim made. The basic narrative structure is self-consciously identical to Mario's odysseys, but the extra contextual details, like the fact that it is Tim's fault that the Princess was abducted, leads to a more nuanced and complicated story. Instead of merely setting out to right a wrong, the player is on a journey of penance. In fact, the name of the first world Tim travels to (which is actually numbered world 2) is titled "Time and Forgiveness." The subsequent books in the lobby develop this theme, inviting the player to consider how life would be different if we were able to retract our mistakes while still learning from their consequences.

The game continues to train players in how to play the game in the first level of the game, though instead of using text, it uses signs featuring buttons or keys at appropriate moments, like the jump button before a ledge. The controls are simple enough however, that experienced videogamers will figure them out in seconds, independent of any coaching. Like *Tetris*, each action is mapped to a single function, and the game falls well-short of using every available input on contemporary controllers (or keyboards).

Puzzle pieces are strewn throughout every level of the game. While many of the puzzle pieces in the "Time and Forgiveness," can be obtained without problem-solving or critical

thinking, there are some basic puzzles that require the player to use the rewinding function in an innovative or non-obvious way. It is interesting to note that each puzzle piece is a unique, real puzzle piece that forms a picture in each room of the hub. *Banjo-Kazooie* uses a similar mechanic to gate access to new worlds, but in that title, each piece is treated like currency; a puzzle piece from any world can be used to solve the puzzle leading to any other world.

The player does not need to collect every puzzle piece in order to progress through the first six worlds, however. In fact, it is possible to go all the way to World 6, “Hesitation,” without collecting a single puzzle piece. The player is never urged to continue forward. The game relies on natural curiosity and the convention of running to the right to structure player’s actions. Arsenault and Perron describe this dilemma between playing for mastery and playing for narrative progress as “video-ludic tension” (p. 127).

<i>Braid</i> Interpretation: Fundamental Level		
Mechanic Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: Progressive and Segmented.</p> <p>Experimentation: Player learns:</p> <ul style="list-style-type: none"> • To move and jump • To rewind time • To collect keys and unlock doors • To read books • To collect and assemble puzzle pieces • Each world has its own temporal quirk <p>Feedback: Game responds to:</p> <ul style="list-style-type: none"> • Player movement • Rewinding • Key collection • Puzzle collection • Player death <p>Evaluation & Anticipation: Player determines the limits of his rewinding ability, learns that each world has its own temporal rules. He may anticipate new gameplay mechanics that will structure levels.</p>	<p>Instantiation: The central hub is modeled after a house, while each world has its own color scheme and natural motif (grassy plains, rocky/desert, ruins). Each world is also framed by a distinct concept pertaining to time.</p> <p>Perception: Players learn to process of each location in relation to its temporal quirk; every world has its own logic.</p> <p>Feedback: Feedback is minimal, often contradicts established conventions (enemy death is mournful, player death is neutral, success receives faint praise).</p> <p>Evaluation & Anticipation: Players learn the basic premise of the story. They may also speculate at new metaphors, temporal concepts, visual motifs and enemy types. One may anticipate world 4, ‘Time and Place’ before reaching it, or guess a combination that doesn’t exist “Time and Perception.”</p>	<p>Instantiation: The game provides players with a hub that branches off into a variety of worlds shaped by metaphors and comprised of a series of puzzles.</p> <p>Experimentation: The player is invited to consider conceptual parallels and real-world implications of gameplay (ie; how would life be different, if we could turn time backwards and still learn from our mistakes?)</p> <p>Prescription: The game emphasizes and encourages experimentation but does not explicitly prescribe much other behavior.</p> <p>Evaluation & Anticipation: Evaluation of player actions is ambiguous and subject to personal interpretation.</p>

This is just one of several ways that *Braid* encourages players to evaluate their actions on their own terms, rather than artificially congratulating or criticizing their actions. While a cheerful sound effect plays whenever a player collects a puzzle piece, it is less a form of praise than it is simple acknowledgment of collision with an item. In contrast, the elaborately animated, musical fanfares that occur when a player collects a star in *Mario 64*, or a jiggy in *Banjo-Kazooie*, both impose a bombastic sense of triumph on players, even if obtaining the item required a trivial amount of effort.

Conventions of player ‘failure’ are similarly subverted. Player health is not measured in degrees as it is in *Mario 64* so a single hit from an enemy or obstacle will result in Tim’s death. Instead of a gruesome, or mocking death animation though, Tim simply falls to the bottom of the screen, and time completely stops. The game then prompts players to rewind time until they are alive again, resulting in an attitude toward death that is not only impartial, but actively forgiving. Even *Tetris*, another game that encourages players to naturally evaluate their performance, provides a clearer sense of fault and consequence. When a player misplaces a tetromino, they have to deal with the consequences of that mistake for several minutes. Undoing a mistake in *Braid* is as simple as hitting rewind for a few seconds, or at the very worst, reloading a level by entering a door again.

Other constants that normally help players make judgments in videogames are also obscured and complicated. In most videogames, enemies are obstacles that must be defeated as quickly as possible, avoided altogether, or function as a source of revenue (either for currency or points) that must be exploited. These actions are often justified by the ways enemies are portrayed; enemies that are not drawn to appear actively malicious or frightening are depicted as

too incompetent, weak, or ugly to live. In *Braid*, enemies are portrayed as neutral, or even cute, and they make mournful or pathetic cries when defeated, potentially evoking pity or remorse; an exceedingly rare affect in videogames thus far. More significantly, there are times when the player must actively preserve an enemy's life or guide them along a specific path to complete a puzzle.

At the end of each level, there is a bridge followed by a castle with a flag, where the player is greeted by a friendly (or at least, benign), dinosaur who informs the player that the princess is in another castle. This is a homage to the original *Super Mario Bros.* where most levels end with a flagpole and a castle, and each world but the last ends with Toad telling Mario that the princess is in another castle. Beyond serving as an inside joke, this reference encourages players to think of *Mario* while playing *Braid*, facilitating comparison between the two games. This likely encourages players to engage in indexical practices; similar to the way footnotes and references encourage further reading in traditional texts.

The transition between the first and second levels of interpretation in *Braid* is less clear than other games, as each world introduces an entirely new game mechanic that necessitates a new experimental period. Most games, including all those I have examined far, feature escalations that require players to learn basic patterns and repeat them with increasing efficiency and/or finesse. The numeric escalation that occurs in *Tetris* forces players to react increasingly rapidly, both mentally and physically, to keep playing. The variable escalation that occurs when new enemies and obstacles are introduced in *Mario 64*, *Banjo-Kazooie* and *DOOM* all require a degree of experimentation when the player initially encounters them, but this experimentation is heavily structured by categories that are established in the fundamental level of interpretation; a new enemy is still an enemy and a new weapon is still a weapon.

Even the Mechanical Escalation that occurs in *Mario 64* and *Banjo-Kazooie* does not radically alter the player's understanding of the game world. While flying hats and transforming into other animals are absurd when compared to reality, they are consistent with the game's logic. *Braid*'s Mechanical Escalation, by contrast deliberately fragments player's understanding of the world, providing the player with several different realities. Perhaps the most striking example of this occurs in World 4, "Time and Place." In this world, time moves forward as the player walks to the right and backwards as the player moves to the left. The player has grown accustomed to rewinding time in World 2 and learned to adapt to factors that cannot be rewound in World 3, but he is unused to time being inextricably and directly linked to position. This changes the very way he reads the gamestate.

Instead of expanding or altering the player's ability to change reality, *Braid* changes the game's reality itself. These changes are inextricably related, but the distinction between them is the difference between "a perspective" and "perspective," the former being a specific point of view, and the latter being an awareness of different points of view. The ability to change reality will necessarily change the way a person perceives reality, as per the old adage "To someone with only a hammer, the whole world looks like a nail." But what *Braid* does, rather than handing the player a hammer, is hand them a world that is made out of nails, and another that is made out of screws, and another that is made out of gears, and so on. Videogames as a medium do this to player's views of reality, but they rarely do it to themselves. The 'Other Castles' that *Braid*'s dinosaurs refer to are not just a reference to *Mario*, but to these alternate paradigms of reality. This is what critics and reviewers mean when they describe the game as "mind-expanding" (Totilo, 2007).

5.3 Metaphorical Patterns and the Promise of Misreadings

While some of *Braid*'s metaphors are evident at the fundamental level of interpretation, it is in the second stage of interpretation, where the game begins to prescribe metaphorical patterns of thought to players.

The most obvious metaphorical exertions are evident through the player's interaction with the game's story—assuming that he chooses to engage with the story at all. Blow has stated that the game's story is presented 'in the fashion of a few books I respect' (Bullard-Bates, 2009).

<i>Braid</i> Interpretation: Secondary Level		
Mechanic Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: New worlds are unlocked sequentially, though the hub itself does not expand until the game's end.</p> <p>Assessment & Reaction: The player learns to actively search for puzzles to solve in each level, looking at each game object as a part of mechanism, as opposed to mere aggressors or obstacles.</p> <p>Feedback: Variable escalation occurs within the first few levels (introducing new enemies and movable objects), while mechanical escalation occurs each time the player arrives at a new world.</p> <p>Evaluation & Anticipation: The player evaluates his completion of puzzles in relation to the concepts that shape them. He may anticipate new uses of abilities or new puzzles before the game presents them.</p>	<p>Instantiation: Each world is prefaced by a distinctive concept, which is usually indicated by the world's name, and discussed by the books that precede it. Each world also features a unique background and graphical motif.</p> <p>Perception: The player's ability to perceive each world is shaped by the world's central concept and mechanics (Movement and Music are affected by Tim's temporal manipulations). The narrative frames the game in comparison to reality.</p> <p>Feedback: Feedback remains subdued, and only serves to recognize changes in the gamestate (as opposed to assigning values to them).</p> <p>Evaluation & Anticipation: The thematic level does not pressure the player to value his experience in a specific way, and the game does not fall into a familiar thematic platform, making specific thematic anticipation difficult. Narrative anticipation is possible though.</p>	<p>Instantiation: Each world is based on a distinct concept, and each sequential level in that world develops and explores that concept further, through both mechanical experimentation and personal reflection.</p> <p>Assessment & Reaction: The game avoids assigning values to player actions. Curiosity, and the desire to challenge one's self, must motivate players to continue.</p> <p>Prescription: Experimentation is still emphasized. The game also invites (but does not force) players to consider the concepts that shape game mechanics in relation to reality. The game does require players to consider game objects in ways that defy videogame conventions ("An enemy can be a tool/ally.")</p> <p>Evaluation & Anticipation: The player develops a Gamé that is subdivided to account for each world's mechanics, but thematically consistent through their pertinence to time.</p>

Players are free to ignore the story altogether if they choose; in fact, the game has been carefully designed so that the narrative does not impose itself on players in the loathed fashion of

the mandatory cut-scene. Players have to make a conscious decision to pause in front of each book, and read the text it contains. The text in each book is kept to a brief minimum however, to minimize the total investment of time and effort in each individual reading. This brevity increases the likelihood of reading.

One could argue that any reading of the game is incomplete or invalid if it fails to account for the text presented. I am inclined to agree with those sentiments, though history has repeatedly demonstrated that humans have a tremendous capacity for interpreting artifacts based on their isolated segments as opposed to their whole. *Braid* remains metaphorical however, regardless of whether players choose to assess only its mechanics, or mechanics and story together. It is worth noting, that a player who judges *Braid* solely on its narrative, cannot accurately claim to have ‘played,’ the game, while a player who plays through a level, even if they ignore the story that precedes it, *can* make that claim.

The passages of text presented before each world are metaphorical on many levels, but their most explicitly metaphorical quality, is that most of them do not directly describe Tim’s travails through the game’s worlds. Most games’ narratives reiterate or directly expand upon the player’s actions within the diegesis. Instead of describing Tim’s journey through the game’s worlds however, each paragraph provides a brief illustration of a normal, modern life. The second and third world are chiefly concerned with Tim’s relationship to the Princess, while the fourth world describes Tim returning to his parents’ home for a holiday meal. In fact, the only thing that separates Tim’s narrative from mundanity is his quest to reunite with the Princess.

This disparate juxtaposition, a normal life compared to an objective traditionally associated with epic quests and fairy tales, invites players to consider the possibility that the

Princess is not only something other than royalty, but that “she” is something other than a lover—a broader, more intangible obsession. In fact, the passages from the fifth world, *Time and Decision*, invite us to compare his quest for the Princess to more traditional, physical relationship. The first book reads:

She never understood the impulses that drove him, never quite felt the intensity that, over time, chiseled lines into his face. She was never quite close enough to him—but he held her as though she were, whispered into her ears words that only a soul mate should receive.

The player will naturally assume that the ‘She’ in question is the Princess, because she is the only female character referenced so far—the only other character mentioned apart from Tim and the Monster, in fact. But the second book turns our understanding on its head:

Over the remnants of dinner, they both knew the time had come. He would have said: “I have to go find the Princess,” but he didn’t need to. Giving a final kiss, hoisting a travel bag to his shoulder, he walked out the door.

Through all the nights that followed, she still loved him as though he had stayed, to comfort her and protect her, Princess be damned.

This complicates the player’s natural assumptions about *Braid*’s quest. While it does not preclude the possibility that the Princess is Tim’s true soul mate, the second passage invites the player to consider her contra traditional love-interest. At the very least, the Princess is something beyond physical affection. She is raw purpose, as indicated by “the intensity” referenced in the first book’s passage. Consequently, ‘Chasing the Princess’ could be a metaphor for any driving obsession from gardening, to solving puzzles to serial murder.

Tim’s decision to leave this other ‘She’ as opposed to staying with her is reflected through the fifth world’s mechanics: each time Tim rewinds in the fifth world, a phantom version

of Tim will repeat the actions he has rewound. If Tim leaps to a pit for example, and the player rewinds to the point before he leapt, a phantom Tim will still leap into the pit. This phantom Tim, a visual avatar of a divergent path, can interact with other phantom game objects (like keys and enemies) distinguished via purple outlines.

Even if the player chooses to ignore, or fails to comprehend the narrative of conflicting relationships presented in the text, he will still be confronted with the experiential metaphor of diverging paths. The text urges the player to take his understanding of the game one step further, by presenting him with a specific “real world” situation where a person must walk down one fork of a crossroad to the exclusion of another, but the game remains experientially, if not narratively, metaphorical through game mechanics.

Braid’s mechanics have such a profound effect on the way the player experiences each world, that it is difficult to look at the game’s thematics as an independent layer. I have already touched on the narrative element of thematics, but the audio, visual and non-diegetic elements of gameplay bear consideration as well.

Each world in *Braid* has a distinct visual motif, comparable to those in *Mario* or *Banjo-Kazooie*, but decidedly more subtle. While the other two titles have very obvious, bombastically themed environments (volcanos, haunted houses and pirate ships), *Braid*’s worlds are filled with objects that are distinctive, but not connected with the world’s theme in an obvious way.

For example, the background of the fourth world, Time and Place, is filled with the sort of lettered building blocks one would expect to find in a nursery. While there is nothing specifically spatial or temporal about building blocks, the fourth world’s books reference Tim returning to his parent’s home, and to his university, and other places in his past and the building

blocks stand as a broad symbol for childhood. The fourth world's mechanic is that time moves in accordance with the player's movement: walking to the right causes time to move forward, while walking to the left causes it to move in reverse. This experiential metaphor is extended to the music as well. Instead of a looping musical track, like the levels in other worlds have, each level of the fourth world plays a lullaby that plays forward or in reverse in accordance with the player's movement.

The fourth world is the strongest example of the thematic layer being mediated by the game's mechanics, though there are other examples. In the sixth world, "Hesitation," the player may drop a golden ring to slow down the passage of time in a localized area. The ring will cause subtle, but discernible ripples to spread slowly across the level, and the ring will distort music in relation to the player's proximity to the ring. The ring itself is a suitable visual metaphor for hesitation, as it brings to mind the hesitation of waiting for a proposal, or, as the second of the sixth world's books suggest, the hesitation a wedding ring may instill in a stranger:

"But the ring makes its presence known. It shines out to others like a beacon of warning. It makes people slow to approach. Suspicion, distrust. Interactions are torpedoed before Tim can open his mouth."

The rest of the sixth world's visual motifs are less obvious. Various styles of clothing and hats are carved into the world's walls. While one could extend the metaphor of the wedding ring to clothing, and state certain kinds of dress will instill forms of hesitation, the association is less apparent than the nursery blocks of the fourth world.

The music of world six also re-uses tracks from earlier worlds. In a game where rewinding time (and repeating actions) features prominently, this recycling creates an ironic sort of structural repetition, contributing to the game's over-all theme, but it might be thought of as

missed symbolic opportunity. Instead of using new songs to give world six a distinctive identity, it is defined by the worlds that preceded it.

The symbolism of other worlds' scenery is even more tenuously related to their respective themes. The third world, "Time and Mystery," features bright yellow skies, and walls that are fashioned from non-descript lumber. The fifth world, "Time and Decision," has walls and platforms comprised of rugs and pillows while leaves fall steadily in the background.

Another thing that becomes apparent in the secondary level of play is that there are rarely any inconsequential enemies or obstacles in a level. In many ways, the mechanical level of *Braid* is similar to clock-work in its design; most puzzles have a single specific solution, and both enemies and obstacles are precisely placed to structure player actions. There are also very few examples of puzzles that can be "failed," and even these puzzles only force players to reload the level by leaving and re-entering the level. This combination results in an affect that necessitates deliberate experimentation and insight as opposed to rote memorization and repetitive actions—two qualities Blow finds to be particularly prevalent and abhorrent in modern game design.

While *Braid*'s prescription of insight and intelligent problem-solving is admirable, it must be noted that the meticulous nature of its puzzles stymie emergent solutions and limits player improvisation. The puzzles must be solved as the designer intended. Admittedly, this is true of all games to a certain extent. Mario must complete certain criteria in *Mario 64* to obtain stars. But when obtaining a star that necessitates combat, or acrobatic jumping there are a greater degree of permissible tactics, and even permissible failures, than there are in *Braid*'s puzzles which require exact timing and precise positioning. When obtaining the second star in Lethal Lava Land, "Bully the Bullies," the player is required to knock the bully enemies off a platform

and into the lava. They can do this by using fisticuffs, by dodging the bullies' charges and jumping on them when they are near the edge of the platform, or through a combination of the two. Every time the player plays the star, the enemies will charge in slightly different patterns as well. This variation even allows players to beat the bullies through a combination of dumb luck and persistence; a player can succeed with a strategy even if has failed several times in a row.

While *Braid* requires persistence, it does not tolerate such stubbornness.

This intolerance never tries to correct player behavior, however. As in the fundamental level of interpretation, *Braid* provides the player with a bare minimum of cues on how to value his experience. The game will not chastise the player for impaling Tim on the same pit of spikes fifty times in row, nor will it really praise him when he finally gets it right. Even without reading Blow's plea⁹ for players to not use a walkthrough, one gets the sense that the game designer wants players to feel proud of themselves for solving its puzzles, or rather, it only wants players to feel proud of themselves if and when they naturally feel a sense of accomplishment from solving a puzzle.

This avoidance of projecting values onto the player extends to the game's conclusion, which is emotionally ambiguous, structurally complex and inter-textual. After the player obtains every puzzle piece, and assembles them into the pictures that are hanging in each room of the hub-house, a section of ladder is replaced, allowing the player to reach a final, formerly inaccessible room. The familiar book room is labeled "1," though it has no subtitle, suggesting that we are at the beginning of the story. The books in the room describe Tim sitting at a café,

⁹ <http://braid-game.com/walkthrough/walkthrough2.html>.

then watching a movie, and they go on to describe Tim's contrary nature. Then the second to final book throws the player a surprise: Tim is already on his quest to find the Princess:

“Tim wants, like nothing else, to find the Princess, to know her at last. For Tim this would be momentous, sparking an intense light that embraces the world, a light that reveals the secrets long kept from us, that illuminates—or materializes!—a final palace where we can exist in peace.”

The final book reads:

“But how would this be perceived by the other residents of the city, in the world that flows contrariwise? The light would be intense and warm at the beginning, but then flicker down to nothing, taking the castle with it; it would be like burning down the place we've always called home, where we played so innocently as children. Destroying all hope of safety, forever.”

These passages introduce the idea that the Princess might represent something terrible. In a way this primes us to expect a conclusion with tragic, as opposed to redemptive or affirming closure. The passages are also clearly and carefully written so that they could be perceived as preceding world two, “Time and Forgiveness,” or as a continuation of the narrative that left off in world six, “Hesitation.” Another telling, but easily overlooked detail, is that the first “level door” in the cloud hub, is positioned at the rightmost corner of the room, when usually, they begin just to the left of the books.

The temporal quirk for this final first world is simple; time moves in reverse, unbidden by the player. When the player leverages Tim's ability to rewind time, things progress “normally.” There are three unnamed, levels that contain simple jumping puzzles, each marked with the image of a flower in regressive states of bloom. The final level, marked with just a bud, is titled “Braid.”

Tim appears at the top left of the screen, with no door to backtrack through. A knight holding a maiden who can only be the Princess descends from a vine that Tim cannot reach. The knight says, “I’ve got you!” The Princess leaps out of his arms, and yells for help. The knight lets out a monstrous cry and leaps on the ground, as if throwing a tantrum, and then says “Come down here!” At that point, a wall of fire begins sweeping from the left of the screen. A platform falls from above, allowing Tim to progress to the right.

The player must then guide Tim through a maze of obstacles while outrunning the wall of fire. The Princess appears to be helping Tim by flipping switches, until he finally reunites with her at the very end of the level, when he climbs a lattice to reunite with her on a balcony. At that point, the wall of fire vanishes in a flash, and the Princess appears on a bed, asleep. Tim cannot walk through the balcony into the room. The only way to progress is by rewinding time.

When the player runs the sequence in reverse, its meaning is mirrored. The Princess is no longer aiding Tim, but trying to kill him. The knight that seemed so monstrous earlier, has actually come to the Princess’ aid, and she is crying for help to escape Tim, who was stalking her. At the very end of the sequence, the player has access to a door that was locked before, where he can proceed to the epilogue. Before moving on, I would like to discuss the ending in greater detail, however.

The first time I played *Braid*, I actually misread the ending. This in itself is a testament to the complexity of *Braid*’s narrative. In an earlier paper, I argued that the Princess was not trying to kill Tim, but simply prevent him from abandoning her. Since the ending must begin with Tim walking away, and the first book in World 2 states that Tim made a mistake, I assumed that he had left the Princess, maybe for the other, mysterious “She” referenced in World 5’s books.

More careful examination of the scene shows that there are instances where the Princess is clearly trying to kill Tim though, as opposed to merely immobilizing him. It is still possible that she is doing this out of anger for Tim leaving her, though it seems more likely that she thought Tim was a monster all along. Or perhaps she herself was always monstrous in nature.

It is intentionally ambiguous, and the Epilogue section complicates matters further. The epilogue level is styled as a mix between the cloud levels, and the second world's pastoral atmosphere, peppered with red and green books. Many of the green books are mysteriously absent, while the red books describes situations that do not describe Tim by name, though they pertain to his situation. A boy guides a girl through a square in Manhattan. Another man—or maybe it is Tim?—hunts for the Princess with various instruments and scientific tests, and another passage infamously references the atom-bomb:

“He scrutinized the fall of an apple, the twisting of metal orbs hanging from a thread. Through these clues he would find the Princess, see her face. After an especially fervent night of tinkering, he kneeled behind a bunker in the desert; he held a piece of welder’s glass up to his eye and waited.

On that moment hung eternity. Time stood still. Space Contracted to a pinpoint. It was as though the earth had opened and the skies split. One felt as though he had been privileged to witness the Birth of the World...1

Someone near him said: ‘It worked.’

Someone else said: “Now we are all sons of bitches.””

Paired with evidence found in the game’s “secret ending,” which I will discuss in the next section of this chapter, many people came to the conclusion that the Princess was supposed to represent the atom bomb. This reading was so sensational and became so prevalent that it swallowed the game to a certain extent. Blogs and message boards where exploded with the revelation, “*Braid* is about the nuclear bomb.” It got to the point where Blow eventually felt the

need to respond to these claims in a podcast.¹⁰ He explained, with some frustration, that the game is about much more than the atom bomb. Comprehensively, the Princess is intended to represent many things ranging in gravity from the atom bomb to the simplicity of Princess Toadstool.

In some respects, this comprehensive interpretation is frankly less interesting than the fact that a videogame ending was able to inspire multiple, misreadings that can be argued with textual (and intertextual) evidence. Videogame stories run the gamut from completely absent (*Tetris*, *Pong*) to extremely simple (*DOOM*, *Banjo-Kazooie*, *Super Mario 64*) to very strange (*Burger-Time*) to utter convolution (later entries in the *Final Fantasy* and *Metal Gear Solid* franchises spring to mind) but they rarely present an ending that can have several competing, coherent interpretations.

5.4 *Braid* as a Craftsman Videogame

Braid's epilog concludes with several other quotations, and finally closes with a castle. Regardless of whether Tim is leaving the Princess as a stalker or a lover, and whether she is a woman, or the atom bomb, the epilog deposits the player where he began, in the city outside the hub-house. The ending of *Braid* is its beginning, giving the plot the structure of a Mobius strip; the same structure as a single self-contained braid. Consequently, the game's structure becomes a metaphor for the recursive theme of its gameplay.

The game's aphoristic books ensure players begin the tertiary level of interpretation prior to reaching its ending. Many of the levels are inter-textual references to other videogames, such as World 4 Level 2, "Jumpman," and World 6 Level 6 "Elevator Action." These references invite

¹⁰ Blow responded to this in a Podcast on Destructoid. There are many purported links to it on the internet, but they are all dead.

players to compare *Braid* to those other titles, and also convey a certain, postmodern self-awareness. It is the enigmatic ending, however, that will most likely send players to engage in indexical practices by seeking answers beyond the source text. The blank green books in the epilog suggest something is left unsaid. The mysterious nature of the Princess begs for clarification. Many players will come to their own conclusions, and leave it at that, others may turn to the game's creator, seeking clarification of his intent, while others still may turn to their peers.

<i>Braid</i> Interpretation: Tertiary Level		
Gameplay Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: The player has encountered every mechanical concept in the game.</p> <p>Prediction & Reaction: The player learns the quirks of each enemy and each level's mechanic.</p> <p>Feedback: Feedback does not change from earlier levels of interpretation.</p> <p>Reflexive Evaluation and Comparison: The player evaluates his performance based on his own terms. He becomes fluent in thinking about and navigating time in unconventional ways (temporal-dilation in <i>Hesitation</i>, simultaneous existence in <i>Time and Decision</i>). He may mentally apply the temporal principles learned in <i>Braid</i> in real-life.</p>	<p>Instantiation: The player has encountered all of the visual styles, sound effects and music. Each world introduces a discrete thematic concept developed through narrative. Symbolic imagery and Inter-textual references in levels titles invite players to compare <i>Braid</i> to other titles.</p> <p>Perception: The player learns how to look at each world's in terms of their defining concept.</p> <p>Feedback: Variable escalation concludes. Upon completion, the game presents players with extra narrative information that complicates the player's understanding of the story.</p> <p>Reflection: The player internalizes the concepts that define each world. He can imagine how these concepts would apply to the real world, and can imagine new levels based on other concepts. Inter-textual references may inspire players to seek authorial clarification.</p>	<p>Instantiation: The player encounters each segment in the game world, and completely unlocks the hub level.</p> <p>Prediction & Reaction: The player expects puzzles to develop established concepts and knows to experiment according to enemy, platform and key placement.</p> <p>Prescription: The game encourages the player to judge the game on his own terms, and rewards unique insight over memorization and refinement of coordination.</p> <p>Translation: The player learns how to comprehend different approaches to the passage of time. Certain worlds exhibit orientational metaphors, such as "Right equals progress," (This is especially true of World 4, where moving to the right is synonymous with the linear passage of time). The player may learn to regard <i>Braid</i> as a polemical work, representing a certain philosophical and political agenda.</p>

Again, contextual research is not an essential to the process of videogame interpretation, or even the completion of my interpretive model. In general, I agree with Celia Pearce's

assertion in *First Person* (Pearce, P. 147) ¹¹that “Games do not ask the player to construct or interpret what the author is trying to tell them. Rather they function as a kit of parts that allows the player to construct their own story or variation thereof.” In fact, one could make the argument that most games are not crafted with a specific authorial message in mind, since relatively few games are the work of a single creator.

That said, the videogame medium is certainly capable of making players wonder “What is the creator trying to tell me?” and providing sufficient motivation to make them seek an answer. *Braid* is one of those games. This push to look outside the game’s text is a part of what I refer to as “translation” and it typically occurs in the tertiary level of the interpretative spiral, which is focused on forming connections between the player’s Gamé and the rest of the world.

Aside from his direct response to the Princess-as-atomic-bomb readings, Blow has not published a statement intended to complicate the meaning of the ending. One of the most salient points Blow makes is that the game is about the “journey as opposed to the destination” (Thomsen, 2010) and that he is unable to sum up *Braid*’s story through writing, which is precisely why he made the game, as opposed to writing out its meaning, in the first place (McElroy, 2008). Blow’s statements place the onus of literary meaning-making on to the individual players; where *Braid*’s narrative is concerned the author is not merely dead—he has publically committed suicide. This prevents players from declaring their readings to be “canonical.” Contrary to the deterministic solutions of *Braid*’s puzzles, the game’s meaning is highly subjective and in some respects, improvisational and dependent on individual player experiences.

¹¹Pearce’s response to Flanagan’s response to the article “Towards a Game Theory of Game.”

That said those who read Blow's discussions of *Braid*'s ending will come to appreciate another, more explicit and subversive authorial message embedded within the game. In his interviews, Blow frequently states that he was not setting out to make money or earn acclaim with *Braid*, expressing a set of values that run contrary to mainstream game development (and to consumer culture in general). These sentiments are not as noteworthy as his criticism of several prevalent conventions in games. In interviews with Stephen Totilo and Simon Parkin, Blow accuses *World of Warcraft*'s numerically-based character progression system as artificial and unethical, stating that the gameplay itself is rarely compelling, but the steady numerical increases give player's the illusion of objective progress and concrete validation. These "artificial," or contrived rewards perpetuate players' interest, even though there is no organic sense of achievement occurring.

In many respects, the principles Blow used to develop and define *Braid* are not unlike the values of the arts and crafts movement. People can appreciate arts and craft artifacts even if they are unaware of those artifacts' function as critiques of industrial design. When the same people become aware of the underlying principles that shaped those artifacts however, their interpretation of them may change substantially. Someone who appreciates the aesthetics of Green and Green Architecture may find a deepened appreciation of the Gamble House after learning that it prizes individual craftsmanship and natural building materials over industrial building practices. By the same token, a game designer working for Activision-Blizzard (a prominent commercial game developer and creator of *World of Warcraft*) may thoroughly enjoy *Braid* the first time he plays it, only to find its lack of positive reinforcement pretentious and or hyper-critical after reading Blow's accusation of *World of Warcraft* being unethical.

The aesthetics of *Braid* can also be considered craftsman-esque. The game's visuals appear hand-painted, as opposed to the graphics of most mainstream titles, which are built using industry-standard graphics engines or specific development kits. The music and sound effects, both orchestrated with classical instruments as opposed to synthesizers, also have an organic quality.

These commonalities between Blow's design principles and the philosophies of craftsman architecture may have a common root: considerations of scale. In his interview with Simon Parkin of Gamasutra, Blow discusses the difficulties of scaling conceptual development with games of different budgets. Blow argued that while Independent games can afford to start with thematic content, and make sure that the mechanics closely correspond to a title's theme, it is difficult for larger, mainstream developers to maintain that same close correspondence. Similarly, while arts and crafts architects can build houses using organic materials like natural stone and hardwood, the same practices are far more costly, and less structurally sound when applied to large-scale structures. Just as Blow finds it difficult to describe the leap between "*Gravitation* and *Gears of War*," (Parkin, 2008) craftsman architects could not make the leap between bungalows and skyscrapers.

5.5 Speed-Runs, Constraint Play and Achievements

As I mentioned in Chapter 3, there are many different ways to play a single game. In addition to variations in play styles, players also often play games in ways that are subversive or unorthodox. Just as readers can resist a text, players can resist the mechanics of a game by deliberately searching for glitches. They may also participate in what I refer to as constraint play, where they impose extra restrictions on their interactions with the software. Constraint play can

take many forms, from character, game object and ability restrictions, to refraining from using certain buttons on the controller. One fairly prevalent form of constraint play is performing a “speed run” which, as the name suggests, entails beating a game as quickly as possible. The prevalence of speed runs can be attributed to its conceptual simplicity; any game with any sort of linear progression can be played as a speed run.

Very few games simply suggest a form of constraint play to players. In fact, it could be argued that when a game does suggest an alternate game mode to players, it should not be considered constraint play but an alternate game mode. I distinguish between the two based on the game’s mechanics: if the difference in play stems solely from the player’s performance, as opposed to a programmed change to the game’s rules or mechanics, it is constraint play. The difference is that a player may decide to stop obeying his self-imposed constraints at any time.

From an interpretative perspective constraint play is almost identical to playing an alternate game mode and as such I would suggest that both types of alternate play warrant distinctive applications of the Interpretive Spiral. Playing a game on a speed run is a different experience than playing it normally, just as *Tetris*’ B-Type offers a distinct experience from *Tetris* A-Type. Different modes and constraint plays within the same game will generally require the same ludic literacies, but the player will generally have to exercise them with different tactics or refined precision.

Braid features a speed runs mode that is accessible from the game’s pause menu after players beat the game the first time. Several individual levels are listed alongside challenge times, as well as a Full Game challenge with a target time of 45 minutes. This mode changes

play at the fundamental level of the spiral and leads to different interpretations at the secondary and tertiary levels of the model as well.

The most obvious change to interpretation is the presence of a persistent time limit. This adds a dimension of temporal linearity to the game that effectively reverses the message of the original game's procedural rhetoric, which presents time as a malleable force rather than a constant. It also reverses the game's theme of forgiveness. Even though players can die, and occasionally 'break' a puzzle in such a way that they have to restart a level, the game never imposes a sense of failure on players. Blow was careful to avoid chastising or belittling players who 'fail' at speed-runs; if the player runs to the end of a level, or allows the timer to expire without collecting all of the puzzle pieces, the game merely tells players that the speed run is "incomplete," and shows how many puzzle pieces they managed to collect. All the same, this is a clearer commentary on the player's capabilities than merely pausing time or requiring a restart.

<i>Braid Full Speed-Run Interpretation: Fundamental Level</i>		
Mechanic Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: Progressive and Segmented.</p> <p>Experimentation: Participation in speed runs implies that players have already mastered the game. Any improvised experimentation will erode players' chances of succeeding</p> <p>Feedback: Game responds to:</p> <ul style="list-style-type: none"> • Linear passage of time • Player movement • Rewinding • Key collection • Puzzle collection • Player death <p>Evaluation & Anticipation: Players are constantly comparing their progress to the progress of the timer, trying to move faster. The players know what is coming next, and anticipate how much time it will consume.</p>	<p>Instantiation: A linear progression of worlds and levels subdivided in a hub.</p> <p>Perception: Players must ignore thematic elements that could distract them from their progress. Players are encouraged to view things in terms of their strict mechanics.</p> <p>Feedback: Feedback continues as normal, but the only significant feedback is the progress of the game timer.</p> <p>Evaluation & Anticipation: Players do not evaluate the thematic content of the game, and they do not need to anticipate what will thematic content will come next as they are already familiar with the game.</p>	<p>Instantiation: The player does not view each world as a discrete metaphor, so much as a sequence of changing rules.</p> <p>Experimentation: Experimentation is essentially equivalent with a mistake.</p> <p>Prescription: Expediency is prized above all else. Players must refine what they already know to a perfect performance.</p> <p>Evaluation & Anticipation: Players evaluate their experience with the game based on how closely their performance coincides with their highly developed and specific Gamé.</p>

Another striking change that speed running imposes on players is the complete excision or extenuation of thematic elements. For the individual level speed runs, the player is instantiated at the very beginning of the level, without having to pass through the preceding levels, or that world's cloud doors. The player will also not have time to reflect upon the level's imagery, or listen to a complete song, as every second must be applied toward an expedient solution to the game's puzzles. For the same reasons, players cannot afford to pause and read any of the books in the full speed run of the game, as any delay will make completing the game within the given time limit more difficult or impossible. Furthermore, when players attempt the full speed run, they must progress in a linear fashion to avoid losing time by backtracking. Normally, the game invites players to progress at their own pace, skipping levels if necessary, to consider and compare their unique mechanics. Consequently, the interpretive emphasis shifts away from the metaphorical and affective, to the strictly mechanical.

This allows users of the interpretive spiral, that is to say people who are reading and analyzing the completed model of player's interpretation, to make certain assumptions about the player's motivations. Players who are solely interested in playing for progress, either to see how the story concludes or to explore the game world, will likely have very little motivation to participate in speed run mode. Conversely, players who play games for mastery will likely feel some compulsion to test themselves against the game's trial times. There is a third type of player to consider however, who crosses the line between masterful and progressive players—those who play to experience and dominate every part of the game. These players are colloquially referred to as “completionists.” They will not only seek complete comprehension of the game's story, but complete mastery over the game's offered challenges as well.

The game industry has recently developed a unique type of reward that specifically appeals to, or preys upon, the compulsions of completionists: The Achievement. In the context of video gaming, an Achievement refers to a programmed award that acknowledges a player's in-game accomplishment. These achievements are often (but not always) assigned a certain numerical score that corresponds to the Achievement's difficulty. Furthermore, these achievements are linked to a player's profile in an online gaming network, such as Xbox Live, the PlayStation Network, or Steam. If that particular gaming network assigns scores to achievements, the total score of all the achievements earned on that gaming account are aggregated. This score digitally reifies a player's participation and completion of games into what Xbox refers to as a "Gamerscore." When this score-tracking framework is applied across games, it is often referred to as "metagaming."

Not all completionists are motivated by metagaming. Many completionists simply want to experience all a game has to offer, or feel the sense of accomplishment that comes from having conquered a challenging task. Conversely, it is possible for one to desire a higher Gamerscore and not be a completionist. In fact, a player can effectively ignore *Braid*'s entire story and unlock every achievement in the game, maximizing their gamerscore.

Those who have read Blow's criticism of artificial reward structures may find the inclusion of achievements in *Braid* to be hypocritical, or at least perplexing. Metagaming can be considered the ultimate form of an artificial reward system, in that it presents fabricates a digital, but ultimately insubstantial reward for playing a game. The simplest explanation is that Blow was required to include achievements for the game's initial release on Xbox Live as a matter of Microsoft's policy. Xbox Live was the first game service to feature achievements, and it wanted to incentive sales of every game by including achievements. Since the achievements were

already implemented in the Xbox version of the game, Blow was effectively forced to include them for the PSN and Steam releases of the title, or else they might appear to be incomplete or inferior versions of the title.

If one carefully examines *Braid*'s achievements however, they may notice that there is an almost flippant, or deliberately provocative, aspect to them. Compared to the rest of *Braid*, the achievements are uninspired. Players unlock an achievement by 'traversing' each level (requiring trivial effort), by completing each world's puzzle and completing the game's story (requiring moderate effort). The final achievement requires player's to complete an entire speed run, requiring tremendous effort. This can be considered a strict adherence to Microsoft's policy that downloadable titles should have a certain number of achievements, and they should vary in difficulty.

This may also explain why Blow decided to include a speed run mode that seemingly subverts the messages of the original game. If a player decides to obtain the game's final achievement in pursuit of the artificial reward that the game critiques, they must effectively play a different game. At the fundamental level, speed runs require meticulous memorization and routinized repetition from players, which are two activities that *Braid* discourages from the fundamental level of interpretation.

5.6 *Braid*'s Stars: Interpreting Secrets

There is yet another element hidden within in *Braid* that caters to completionists, though specifically those completionists motivated by organic rewards. Throughout the game, there are eight secret stars that can be obtained by solving puzzles hidden within the levels. There is no

achievement for obtaining the stars, and each individual star offers the player no reward by itself, but if the player obtains all eight secret stars, they will unlock a new ending to the game. The only evidence that there secret stars in the game is a constellation in front of Tim's house, and a few extraneous elements hidden within each level that can be exploited to reach previously hidden and inaccessible sections of the level.



Figure 5.2: *Braid*'s Secret Star Constellation

Theoretically, it is possible to obtain all of the secret stars on the first playthrough, but it is more likely that players will unwittingly prevent themselves from obtaining the first secret star by progressing through the game normally. Obtaining the third world's star requires the third world's puzzle to be incomplete, so that they players can assemble the star by placing the puzzle pieces together in an unorthodox fashion. Most players will naturally complete the third world's puzzle however, causing it to lock together, preventing them from forming the star. This suggests that Blow intended the player to find the stars after playing through the game at least once, normally.

All of the stars require non-trivial effort to obtain ensuring players will feel an organic sense of achievement by obtaining them, even if they do not collect them all to unlock the alternate ending. Obtaining the first star merely requires curiosity and a great deal of patience. There is a cloud in the first world that slowly creeps across the screen. After approximately an hour and forty five minutes, the player can jump on top of it and access an extra part of the level where a star is hidden. Other stars require more active approaches, including careful use of rewinding and timing. Obtaining each star requires players to notice something unusual about a level that can be twisted or exploited in some non-obvious way.

Once the player has collected seven out of eight stars, the final level will be altered slightly, so that two of the switches will become time-immune. This subtle difference will allow the Princess to proceed much faster than normal, and for Tim to reach the end of the level faster. At the very end of the level, Tim will be able to jump on a fallen chandelier, which will rise to the top of the level. Just before Tim reaches the Princess, she will flicker across the screen, and an electronic whine—the sort of sound effect used in movies to indicate a charge—will play before the level turns white accompanied by the sound of a huge explosion. Many players used this scene to add credence to the reading of the Princess as a representation of the nuclear bomb. After the flash of white, the player will be able to go into the Princess’ formally inaccessible bedroom, and claim the star hanging above her bed. Afterwards, players can go to the red door that typically leads them to the epilogue. Instead of arriving at the epilogue however, they will be taken to the very beginning of the game where they can look at the now-completed constellation, Andromeda, that has been filled in with stars. If the player presses the up button, the stars will fade into the background, and players will be able to look upon the Princess at last.

Playing for stars is an amplification of *Braid*'s normal gameplay. Save for the star accessible in the hub (which can effectively cause players to “fail” at obtaining all of the stars), the experimentation, perception and prescriptions are consistent with the normal mode of play, but exaggerated in difficulty. Due to their necessarily enigmatic nature, secrets, and the way players pursue uncovering them, will vary heavily from one game to another. In many games, “playing for secrets” will entail a great deal of experimentation, ranging from random button presses, to using game objects in non-obvious ways. In many cases, this heavily experimental and analytical style of play will constitute an abnormal interpretation of the game that must be modeled using a distinct application of the interpretive spiral. *Braid* happens to be a game that natural emphasizes experimentation, puzzle-solving and searching for anomalies however.

Admittedly, this is operating under the highly unlikely assumption that players do not consult strategy guides or online message boards to discover secrets, however. In almost every case, playing games according to a guide will drastically change player's interpretation of a game, just as reading a book with the ‘assistance’ of Cliffs Notes or Wikipedia will alter the way readers develop an understanding of a book. Guides will either completely negate, or heavily structure the experimental phase of gameplay, preventing players from experiencing the frustration of searching answers and the natural satisfaction of finding them. Modeling these alternate interpretations would warrant an application of the Interpretive Spiral that references both the strategy guide and the game together.

Chapter 6: Testing the Spiral

On Subversive and Emergent Play

Analyzing subversive play not only presents a challenge to my Interpretive Spiral, but to traditional notions of interpreting artifacts. Unlike indexical practices, which a game can encourage by invoking references to external texts as I demonstrated in the last chapter, a game cannot explicitly invite subversive play and practices, or else said practices cease to be genuinely subversive. An example is in order.

In chapter 5 of *What Video Games Have to Teach Us about Learning and Literacy*, Gee relates an account of playing the beginning of *Tomb Raider: The Last Revelation*. The introduction proceeds as a flashback in which the willful protagonist, Lara Croft, is lectured by her mentor, Professor Von Croy. Von Croy's lecture does double duty as a tutorial of the controls and a diegetic dialog establishing both Von Croy and Lara's personality. Von Croy frequently tells Lara not to stray from the path, but Gee reveals that the game was designed to teach players to disobey the professor:

“The game has a neat way to ensure that even inept players will discover that they can find good things if they are willing to disobey the professor. For example, when I was playing the game, at one point Von Croy ordered Lara to jump across the cavern; in doing so, she fell in the water below, due to my incompetence controlling her (via the computer's keys). She can climb back up again, and try the jump again, (indeed, she needs to do this to follow Von Croy and eventually complete the episode). But, low and behold, as Lara swam toward land, she discovered a golden skull in the water. A player cannot help but think: What if I purposely disobey orders and jump and climb other than where I am told? What other good things will I find? Soon one is just a bit more like the spoiled and willful Lara herself (and practicing jumps and climbs).”

-Gee, 2007, p. 117

While the professor's authority and the trust-worthiness of his tutorial are both undeniably subverted, I argue that Gee is not engaging in subversive play by taking the path less-traveled here, or else the game would not mechanically, and thematically reward his

disobedience with treasure. Rather, what the game does by calling itself into question, is entertain a wider variety of experiences emerging from gameplay.

Certain games accommodate more emergence than others, and they can do it in many ways. The recently released title *Journey* encourages emergence by rewarding player exploration and intentionally subverting traditional conventions and perceptions of linear progression in videogames. These emergent titles are harder to ‘subvert’ than traditional games because they permit and reward a wider variety of player behavior. In fact, a successful design strategy for designing more emergent games is to anticipate, accommodate and validate various ways players will attempt to subvert the game. Another effective way to promote emergence is for games to facilitate and promote user generated content, as exemplified by *Uru Live* and *Little Big Planet*.

Subversive play and practices do exist and they are important, however. Attempting to subvert a game is central to the task of quality assurance and bug testing, for example. But these practices typically stem from the desire to break, stretch, or otherwise short-circuit the typical feedback loop between player and game. One such practice entails modifying the gamestate by directly tampering with the code (or through the use of a cheating device), as opposed to player’s using their ludic capabilities and literacies to write in the gamestate. Repurposing the game as a platform for movie-making instead of play, as per machinima, is another practice. These practices are beyond the scope of my spiral, just as using the pages of a novel for papier-mâché evade the scope of literary criticism. Other, less radical forms of subversive play do exist, however, and they yield unique interpretive perspectives. Again, an example is in order.

The critically acclaimed first-person shooter, *BioShock* presents players with the choice between “rescuing” and “harvesting” Little Sisters; brainwashed girls who wander the game’s

underwater world, collecting a valuable resource. As you would expect, rescuing the girls frees them from their mind control at the expense of some of the resources, whereas harvesting them ends their life, but gives you all of the resource they have collected. But there is a third choice. Ignore the Little Sisters, and their fearsome protectors, The Big Daddies, altogether.

The game does everything it possibly can to encourage players to engage with them, short of requiring the player to interact with them, save for one interaction. Mechanically, the game becomes punitively difficult without the resource they provide called ADAM. Thematically, the game constantly refers to the sisters. The game's complex affect, which explores the implications of Ayn Rand's objectivism, is incomplete without dealing with this choice of exploitation. But the game's code does allow players to do it, subverting the experience of gameplay in every category.

Even if players recognize this choice before engaging the game at the Tertiary Level of Interpretation, they will most likely lack the mastery required to complete the game without the mechanical resource. Needless to say, these subversive processes are not required processes for interpreting games, which is why I am not including them in the normal diagram of the Spiral. They can be individually mapped however, in a comparable manner to constraint play.

For the sake of brevity, I have only mapped *BioShock*'s Tertiary Level of Interpretation here. Subverting the game in this manner will yield substantial changes at each level of interpretation, however, and it is impossible to knowingly subvert a game without playing it.

<i>BioShock Subversion Interpretation: Tertiary Level</i>		
Gameplay Spiral	Thematic Spiral	Affective Spiral
<p>Instantiation: The player has traversed each level before.</p> <p>Prediction & Reaction: Players have developed strategies for dealing with each type of splicer without the assistance of plasmids. Their knowledge of movement patterns is particularly comprehensive</p> <p>Feedback:</p> <p>Reflexive Evaluation and Comparison: The emphasis on shooting, avoidance and resource management force the player to consider the resource cost of each skirmish. Strategic character customization options are significantly narrowed, and the game bears stronger parallels to more traditional FPS or survival horror titles.</p>	<p>Instantiation: The player is familiar with every visual theme of rapture.</p> <p>Perception: The player understands the story of the game</p> <p>Feedback: The NPC's urging to save or harvest the little sisters become a pronounced nuisance.</p> <p>Reflection: Refusing to participate in the liberation or exploitation of Little Sisters can be considered a skeptical or indifferent reflection on the game. It also diminishes the narrative significance of interacting with certain NPC's and audiotapes littered throughout the world. It also represents the shortcomings of the writing, which do not include account for a consistent policy of indifference.</p>	<p>Instantiation: The player has traversed each level before, at least once, and likely twice.</p> <p>Prediction & Reaction: The player's Gamé is extremely adept at hacking, shooting, resource management and fighting against splicers, robots and turrets.</p> <p>Prescription: The player's lack of Adam leaves his Plasmids (magic) weak. This necessitates a heavy reliance on other resources such as, ammunition, health kits, money, and weapon upgrades. It also requires a higher degree of mastery with shooting and hacking mechanics.</p> <p>Translation: The player's successful playthrough can serve as means of expressing dissatisfaction with the system as presented, or a means of asserting mastery over the game.</p>

Since this particular form of subversion is predicated on ignoring a prominent element of gameplay, the mechanic category of interaction distorts to account for the procedural lacunae, which in turn affects the thematic and affective categories of interpretation. The lack of ADAM decreases the viability of combative plasmids (spells), as the player cannot afford to upgrade them. This results in a domino effect that makes Eve syringes (items restoring magical power) less valuable, as magic is not helpful. Accuracy with firearms and conservation of ammunition, become crucial as opposed to prudent. Hacking, in turn becomes more important as it allows players to procure ammunition and health kits at a lower price. The game's moral choice system also gates access to character customization. By refusing to take a stance, the player must abstain from customization options

This subversion also exposes the game's thematic blind spot; NPCs urge the player to save or harvest Little Sisters, but they do not comment on the player's consistent indifference

toward them. This is the best example of how such subversive practices can be productive. By outmaneuvering the game's expectations, the player identifies missed opportunities for more emergent design.

These practices can also be intrinsically satisfying, or serve as a uniquely active form of criticism. By going against the grain of the game's design and finding ways to play that escaped the game designer's scope, players can set themselves above the game system as-presented. The translation can also serve as a critique designed to call attentions to the shortcomings or constraints of the game design.

In Comparison to MDA Framework

Before concluding, I would like to compare my model to another popular model for videogame analysis: Robin Hunicke, Mark LeBlanc and Robert Zubek's Methods, Dynamics and Aesthetics (MDA) Framework.

MDA is a formal approach to understanding games that was first introduced in 2001 at the Game Design and Tuning Workshop in San Jose. It was developed to "bridge the gap between game design and development, game criticism and technical game research," by "clarifying and strengthening" the iterative processes used by professionals in each field. This clarification and strengthening is accomplished by structuring the analytical processes applied to games with a specific model.

Like my model, MDA analysis has a tripartite structure, beginning with a game's mechanics. For MDA, "Mechanics" refer exclusively to a game's "Rules." These Rules in turn, combine to produce the game's "System" which is the subject of the second layer of analysis,

“Dynamics.” The game’s System establishes its “Aesthetics” which refer to the experiential outcome the game evokes in players.

The MDA Model, Summarized			
Level of Analysis:	Mechanics	Dynamics	Aesthetics
Comprised of:	Algorithms, Code	Rules	System
Produces:	Rules	System	Experiential outcome, various types of “Fun”
Examples:	Button presses, Weapons and Power-ups, stat-tracking, ‘combo’ moves	Risk-reward ratio, time limits, presence of opponents, etc.	Fellowship, Fantasy, Sensation, Narrative, Expression, Challenge Submission, Discovery

Like my model, each category of MDA analysis can be applied to a game in isolation or in unison with others to develop certain ‘models’ of gameplay. The paper suggests both ‘Aesthetic,’ and ‘Dynamic’ approaches to modeling gameplay. Aesthetic Modeling suggests that designers work backward from their desired emotional and experiential outcomes by first defining those features they want to evoke in players (Fellowship, Challenge, Expression) and then integrating dynamics that foster those experiences (playing in teams, time limits, individual customization). Conversely, designers can model based on dynamics and see what kind of aesthetics (affects) result.

The most obvious distinction between MDA Framework and my Interpretive Spiral, is that the MDA model is solely focused on the Mechanical dimension of games, to the neglect of their thematic content. Curiously, Hunicke et al acknowledge that mechanics alone do not account for a game’s aesthetics alone, but rather, they must be combined “Together with a game’s content, (levels, assets, and so on),” in order “to support overall gameplay dynamics.” Despite this acknowledgment, there is no aspect of the MDA model that directly lists or addresses this “content.” There is a direct chain of reference between code and aesthetics (code

becomes rules, rules become systems, systems become aesthetics) which imply that all content must be considered mechanical, or that thematic content has a negligible effect on interpretation.

Whereas my model is best suited for analyzing existing games, Hunicke et al primarily present MDA as a tool for modeling and testing new games. That said, I see no reason why both analytical models cannot be applied to both tasks. On the following page is my attempt at analyzing *Mario 64* as a completed gameplay artifact using MDA's categories.

Admittedly, Hunicke et al never apply the model to an entire videogame in their presentation paper. The subdivisions in each category are also my own invention, save for the aesthetic goals presented in the third category, and it is possible—even likely—that the authors would recommend different subdivisions for analysis. As you can see, none of the levels account for the game's thematic content. Furthermore, when the model is applied to a moderately complicated videogame like *Mario 64* in its entirety, deciphering which mechanics contribute to which intended aesthetic value is challenging.

<i>Mario 64</i> MDA Analysis		
Mechanics	Dynamics	Aesthetics
Constant Abilities: running, jumping, fisticuffs, camera control, segmented health bar Situational Abilities: flight, swimming, surfing Game Object Types: power-up caps, switches, enemies, collectible items, moving platforms, container blocks damaging terrain UI: Camera icon, health gauge, coin count Feedback: Player damage, item collection, switch triggers, Controls (hardware): Single-joystick, face buttons, trigger buttons Controls (software): single and multiple button actions Other Rules: Multiple levels segmented by a hub, collect stars to	Constant Systems (and dynamics): Navigation in 3D (finesse), Collection (risk-reward) Situational Systems: racing (time-constraint), boss fights (pattern recognition), puzzle solving (experimentation)	Primarily: Discovery, Challenge, Fantasy, Narrative. Secondarily: Submission, and Sensation.

Again, Hunicke et al present MDA framework as a method for prototyping new game systems, and in this respect, their model is much more practical than the Interpretive Spiral. It is much simpler than the Spiral, making it an ideal tool for rapid, conceptual prototyping of individual game mechanics and systematic adjustments. By contrast, trying to sketch out the complete interpretive arc of each game, including audiovisual, narrative and non-diegetic elements, would not only be unrealistically time-consuming, but a conceptually unwieldy way to test individual game-design variables like distinctive mechanics.

Thinking about game mechanics in direct correlation to their aesthetic outcomes—or affects—also encourages designers to come up with mechanics that evoke specific emotional experiences. *Braid*'s puzzles for example, induce a sense of accomplishment when they are solved thanks to their difficulty, and they also invite players to consider subjects like Time-Travel, Decisions, and Space by having them manipulate those concepts directly. These specific mechanics are much more experientially potent than using traditional running and jumping to navigate a level decorated with clocks and aphorisms about time and place.

MDA even has a few advantages for producers of thematic content. Establishing experiential goals early on will help them craft audiovisual, narrative and non-diegetic elements that cater to the specific intended experience. A game that prioritizes discovery, narrative and fantasy will likely feature different writing, art and sounds than a game that prizes sensation, challenge and submission.

That said, the MDA model's implicit suggestion that a game's "content" is comparatively insignificant to its mechanics will likely yield uninspired art and disposable narratives. I also

believe that the Interpretive Spiral can beneficially contribute to the game design process. By applying the Spiral to a game near the end of its development cycle, designers (and artists, and writers, and composers, and interface designers) can make ensure that their work meaningfully contributes to the player's overall experience and interpretation of the game. If the dialog, or sound effects or graphics do not meaningfully alter the affective level of interpretation, or if they alter it in a negative way, the content creators will know they need to refine it, alter it, or excise it to improve the game.

I believe the real strengths of the Spiral however lie in the fields of videogame criticism, analysis and journalism, as it provides videogame scholars and reviewers with a more comprehensive and productive model for talking about games. MDA's neglect of thematic content will result in writing that under-represents the appearance and tone of the over-all play, and worse yet, how videogames relate to non-videogame artifacts and experiences. MDA framework will not tell scholars that *Mario* has a mushroom motif, or that it shares parallels with Tchaikovsky's *Nutcracker*, Carroll's *Wonderland* and the Las Vegas strip. These deficiencies in description will reinforce the stereotypes that videogames are devoid of 'cultural content.'

The most important distinction between the Interpretive Spiral and MDA is that the former accounts for player's shifting relationship with a game artifact over three levels of engagement. At the beginning of the MDA article, Hunicke et al describe games as consumable artifacts that are eventually discarded. They do not account for "why" games are "eventually" discarded, or why some games are discarded more quickly than others. *Mario 64* and *Braid* are obviously not the same from with their expanding hubs of levels and drip-feed of new mechanics. Even *Tetris*, whose mechanics remain consistent beginning to end, from beginning to end, will become a slightly, but meaningfully different game when seen through the eyes of an

experienced player. The Interpretive Spiral provides academics and reviewers with a more robust and viable framework for analyzing games and for tracing users' prolonged interactions with games as artifacts.

Chapter 7: Applications and Conclusions

7.1 The Spiral in Review

I have endeavored to create and present a model that examines the process through which players build understanding of videogames, based on the structure and content of videogames as distinct artifacts. Each of my chapters analyzing foundational videogames demonstrates how different features of the Interpretive Spiral will assist different videogame professionals.

My analysis of *Braid* demonstrates how the spiral can assist game designers, as it demonstrates how mechanical elements can allow players to tangibly interact with abstract concepts, how thematic elements can help bridge the gap between conceptual play and real world experience, evoking an affect of complex metaphorical reflection. Furthermore, the Spiral demonstrated how careful use of inter-textual reference and existing game-design conventions can be used to create gameplay with an affect that criticizes and comments on game authorship.

By analyzing the interpretive implications of thematic elements in an abstract title like *Tetris*, I show how the Spiral can help videogame critics and reviewers consider and discuss games in great detail. Even more importantly, I invite videogame scholars to extend the thematic category of the spiral beyond audiovisual and narrative elements to real-world processes and experiences processes and experiences. I also use the Spiral to discuss how varying degrees of abstraction are inherent to all videogame aesthetics, demonstrating how videogame writers can examine the unique experiential affordances of spatial, logical and audiovisual abstractions. This combination of meticulous detail, metaphorical comparison, and articulation of affordances will help writers go beyond cursory observations and generic descriptions of fun.

Finally, my first use of the Spiral explained how Nintendo created an entirely new paradigm of gameplay through *Mario 64*'s shift to the third dimension. This demonstrates how the Spiral can assist in explaining complex game design concepts by breaking artifacts down into manageable concepts, like ludic literacies and feedback loops. In addition to clarifying the ways players learn from videogames, this simplification is a great aid to anyone with the unenviable but still inevitable task of explaining videogames to those people who are unfamiliar with them.

One common thread between the titles I have discussed is that they all teach themselves to gamers effectively. This not merely because they are easy to learn—though that is certainly true of a conceptually simple title like *Tetris*—but because they have been designed in ways that encourage players to develop coherent models of play, and continually refine them throughout the process of play. I believe that this can be attributed in part to their completeness. The notion of the ‘finished product’ is becoming increasingly rare and quaint in a world of mandatory patches and downloadable content.

This trend should not suggest that the Spiral will only work effectively on older, pre-internet videogames. On the contrary, it suggests another use for the Spiral: a map for archiving and analyzing changes made to games. A completed Spiral, as a point of reference, will allow game designers and players to see how software updates affect one's interpretation of a game. Does the latest patch force us to revert to the fundamental, learning level of gameplay? Are the changes made negligible, and if so, are these practices actually necessary or do they reflect an obsessive compulsiveness in play?

7.2 Hacking the Spiral: Future Applications

If I were to turn the Interpretive Spiral on to itself and examine it as if it were a game I have been playing, I believe that the work I have done here only goes deep enough to describe its fundamental level of play. With *Mario 64* I identified ludic literacies as the building blocks of videogame interpretation and demonstrated how those skills can translate from one title to another. Through my analysis of *Tetris*, I examined how even the most minimalistic thematic elements, like a title screen with onion spires, can profoundly influence a player's interpretation of a game, and how varying levels of abstraction underlay all videogame themes. My discussion of *Braid* discussed game's capacity to function as explicit metaphors and touched on games' considerable capacity as inter-textual and politically critical artifacts. Having slain those dragons and rescued those princesses, several promising 'other castles' of research present themselves to be explored.

Most players do not engage in speed runs, or single-weapon playthroughs, but there are several subtler and more prevalent forms of constraint play. One common example frequently manifests in games featuring a 'moral choice' system like *Fallout 3* and *Knights of the Old Republic*. Applying the spiral to the same game twice, comparing villainous and virtuous playthroughs can provide answers to several pressing questions. Game reviewers and critics frequently perform concurrent playthroughs that explore a title's 'good' and 'evil' choices, but the Interpretive Spiral's categorical structure facilitates more specific analysis, by allowing them to determine if interpretive differences arise at the mechanic, thematic or affective level. If the choice between good and evil simply frames an inevitable fight with different justifications (like the dialog options leading up to the final battle of *Knights of the Old Republic*), and provokes no substantial emotional or experiential response in the player, the Spiral will reveal that a purely

cosmetic distinction between good and evil, like a curling black mustache. This comparative analysis will also benefit designers seeking to create choices that yield substantially different experiences.

This exercise would also assist designers seeking to craft character customization systems that lead to meaningfully distinct experiences. Often times, the distinction between playing as a wizard and playing as a warrior boils down to tweaked numerical values and the presence of lightning animations rather than sword-swinging animations. This has obvious utility for escapist role-playing franchises like *Mass Effect* and *The Witcher*, but it could also be used to enhance titles like *The Sims*, *DOOM* and even *Gran Turismo*. In each of these games, the player's avatar (represented by a person, a gun, and a car respectively) is chiefly distinguished by audiovisual thematic and numerical mechanic distinctions. Conservatively, designers could use multiple applications of the spiral to chart which thematic distinctions and numerical adjustments yield noticeably distinct affects. More pragmatically, designers could use the Spiral to develop distinct mechanics or narrative consequences for these choices. Selecting an obese body type in *The Sims* could unlock a weight loss mini-game or narrative. Driving a Pontiac Firebird in *Gran Turismo* could force players to contend with an occasionally sticky clutch in races. Adding a 'fear' or 'intimidation' value to certain guns could change the dynamic of familiar firefights in *DOOM* by having enemies flee, or use different tactics. Each of these adjustments would yield distinctive experiential and emotional responses noticeable on the spiral.

The Spiral also stands to contribute to Serious Games research. The Tertiary Level of the Spiral charts how parallels are drawn between gameplay and other experiences. Consequently, a completed spiral for a game that is very effective at teaching a player new skills, such as *Mario 64*'s presentation of 3D camera control and stochastic navigation, is a useful references for

educational game designers. The Spiral charts a reasonable pace of escalation over sustained play. Conversely, applying the spiral to effective newsgames can teach non-serious game designers how to convey complex affects, like political ideologies, simply and extremely quickly. Gonzalo Frasca's *Kabul Kaboom* and *September 12th* have been likened to the videogame equivalent of editorial cartoons (Bogost, Schweizer, Ferrari, 2010), requiring only a few seconds of the player's time to make a statement. As such, a single layer of the spiral will suffice for analysis, while still describing the relationship between mechanics, thematics and their resultant affect.

In its current form, I believe the Interpretive Spiral offers a useful approach for charting the experience of videogames. It would be deeply gratifying to have fellow writers, researchers, and game-designers exploit, abuse and hack my model in ways I have not considered the here. Given their tremendous potential for expression and the current pace of innovation and reinvention present in the industry, videogames deserve analytical tools that are as flexible and dynamic as they are rigorous and incisive. I hope this work offers insights on how games and players create meaning through gameplay, and what new meanings we are capable of making in the future.

Ludography

- Banjo-Kazooie*. Rare, Microsoft Game Studios. Xbox Live, Xbox 360. 3 Dec. 2008.
- BioShock*. 2K Boston, 2K Games. Windows Live, Microsoft Windows. 21 Aug. 2007
- Braid*. Number None Inc., Microsoft Game Studios. Xbox Live, Xbox 360. 6 Aug. 2008.
- Braid*. Hothead Games, Number None Inc. Steam, Microsoft Windows. 10 April. 2009.
- Civilization V*. Firaxis Games, 2K Games. Microsoft Windows. 21 Sept. 2010.
- Counter-Strike: Source*. Valve Corporation. Steam, Microsoft Windows. 1 Nov. 2004.
- The Ultimate DOOM*. id Software. Steam, Microsoft Windows. 7 Aug. 2007.
- Fallout 3*. Bethesda Game Studios, Bethesda Softworks, Zenimax Media. PC. 28. Oct. 2008.
- Grand Theft Auto III*. Rockstar North, Rockstar Games. Playstation 2. 22 Oct. 2001.
- Halo: Combat Evolved*. Bungie, Microsoft Game Studios. Xbox. 15 Nov. 2001.
- Journey*. Thatgamecompany, Sony Computer Entertainment. PlayStation 3. 15 Mar. 2012.
- Kabul Kaboom*. Frasca, Gonzalo. Flash. 2002.
- Little Big Planet*. Media Molecule, Sony Computer Entertainment Europe. PlayStation 3. Oct. 2008.
- Super Mario Bros. 3*. Nintendo EAD, Nintendo. NES. 12 Feb.1990.
- Super Mario 64*. Nintendo EAD, Nintendo. Nintendo 64. 26 Sept. 1996.
- Super Mario 64*. Nintendo EAD, Nintendo. Virtual Console, Wii.19 Nov. 2006.
- Super Mario World*. Nintendo EAD, Nintendo. SNES. 23 Aug. 1991.
- Mass Effect*. Bioware, Microsoft Game Studios. Xbox 360. 20 Nov. 2007.
- Mega Man 9*. Inti Creates, Capcom. Wii, WiiWare. 22 Sept. 2008.
- Mega Man X 4*. Capcom. PlayStation. 25 Sept. 1997.
- Metal Slug 2*. SNK, SNK Mega Enterprise. Neo-Geo (362 megabit cartridge). 2 April. 1998.
- Resident Evil 6*. Capcom. PlayStation 3, Xbox 360. TBA, 2012.

Red Dead Redemption. Rock Star San Diego, Rock Star North, Rock Star Games. Xbox 360. 18 May 2010.

September 12th. Powerful Robot Games. Flash. 2003.

Shadow of the Colossus. Team Ico, Sony Computer Entertainment. PlayStation 2. 18 Oct. 2005.

Silent Hill 2. Konami Computer Entertainment Tokyo, Konami. PlayStation 2. 24 Sept. 2001.

The Sims. Maxis, Electronic Arts. Microsoft Windows. 4 Feb. 2000.

StarCraft. Blizzard Entertainment. Microsoft Windows. 31 Mar. 1998.

Star Wars: Knights of the Old Republic. Bioware, LucasArts. Xbox. July 15th, 2003.

Tetris. Bullet Proof Software, Nintendo. Game Boy. Aug. 1989.

Tomb Raider: The Last Revelation. Core Design, Eidos Interactive. PlayStation. 1999.

Myst Online: Uru Live. Cyan Worlds. Microsoft Windows. 8 Feb. 2010.

The Witcher. CD Projekt Red Studio, Atari Inc. Microsoft Windows. 16 Sept. 2008.

The Legend of Zelda: Ocarina of Time. Nintendo EAD, Nintendo. Nintendo 64. 21 Nov. 1998.

Bibliography

- Aarseth, Espen. *Cybertext: Perspectives on Ergodic Literature*. Baltimore, Jon Hopkins University Press, 1997. Print.
- Arsenault, Dominic and Perron, Bernard. "In the Frame of the Magic Cycle." In *The Video Game Theory Reader Two*. Edited by Bernard Perron and Mark Wolf. New York, NY: Routledge. 2008. Print.
- Barthes, Roland. *The Pleasure of the Text*. Trans. Richard Miller, and Richard Howard. New York: Hill and Wang, 1975. Print.
- Begy, Jason. "Interpreting Abstract Games: The Metaphorical Potential of Formal Game Elements." Cambridge, MA: MIT, 2010. Web. 08 Mar. 2012.
<http://cms.mit.edu/research/theses/JasonBegy2010.pdf>>
- Bell, George. "Weapon Damage Information." George Bell's Doom/Tyson Website. Web. 08 Mar. 2012. <<http://www.gamers.org/pub/idgames/lmps/tyson/weapons.html>>
- Bridwell, Norman. *Clifford, the Big Red Dog*. New York: Scholastic, 1985. Print.
- Bogost, Ian. "Comparative Videogame Criticism." Originally published in *Games & Culture: Vol. 1 No. 1*. Sage Publications, January 2006. Ian Web. 16 Mar. 2012.
<<http://www.bogost.com/downloads/I.%20Bogost%20Comparative%20Videogame%20Criticism.pdf>>
- Bogost, Ian. *Unit Operations: An Approach to Videogame Criticism*. Cambridge, MA: MIT, 2008. Print.
- Bogost, Ian. "You Played That? Game Studies Meets Game Criticism." 02 Sept. 2009. Web. 21 Mar. 2012. <http://www.bogost.com/writing/you_played_that_game_studies_m.shtml>
- Bogost, Ian. "Puzzling the Sublime." Gamasutra. Dec. 23, 2009. Web. 16 Mar. 2012.
<http://www.gamasutra.com/view/feature/4225/persuasive_games_puzzling_the_.php>
- Bogost, Ian, Simon Ferrari, and Bobby Schweizer. *Newsgames: Journalism at Play*. Cambridge, MA: MIT, 2010. Print.
- Blow, Jonathan. "Braid – Official Walkthrough." Braid-game.com. Web. 08 Mar. 2012.
<<http://braid-game.com/walkthrough/walkthrough2.html>>
- Bullard-Bates, Daniel. "Reflections with Jonathan Blow." Press Pause to Reflect. 26 Jun. 2009. Web. 08 Mar. 2012.
<<http://presspausetorelect.blogspot.com/2009/06/reflections-with-jonathan-blow.html>>

Carroll, Lewis. *Through the Looking Glass*. Project Gutenberg. 29 Dec. 2008. Web. 08 Mar. 2012. <<http://www.gutenberg.org/files/12/12-h/12-h.htm>>

Carroll, Lewis. *Alice's Adventures in Wonderland*. Project Gutenberg. 25. June. 2008. Web. 08 Mar. 2012. <<http://www.gutenberg.org/files/11/11-h/11-h.htm>>

Cook, Daniel. "Gamasutra - Features - The Chemistry of Game Design." Gamasutra. 19 July 2007. Web. 08 Mar. 2012. <<http://www.gamasutra.com/view/feature/1524/>>

Dickens, Charles. *A Christmas Carol*. Project Gutenberg. 11 Aug. 2004. Web. 31 Mar. 2012. <<http://www.gutenberg.org/ebooks/46>>

Danielewski, Mark Z. *Mark Z. Danielewski's House of Leaves*. New York: Pantheon, 2000. Print.

Earling, Annette "The Tetris Effect: Do Computer Games Fry Your Brain?" 21 Mar. 1996. Philadelphia City Paper Archives. Web. 30. Mar. 2012. <<http://archives.citypaper.net/articles/032196/article038.shtml>>

Eskelinen, Markku. *The Gaming Situation*. Game Studies: The International Journal of Computer Games Research. Volume 1. Issue 1. July, 2001. Web. 16 Mar. 2012. <<http://www.gamestudies.org/0101/eskelinen/>>

Faulkner, William. *The Sound and the Fury: The Corrected Text*. New York: Vintage, 1990. Print.

Gee, James Paul. *What Video Games Have to Teach Us about Learning and Literacy*. Basingstoke. Palgrave Macmillan, 2007. Print.

Godden, Richard. "English 102D: American Literature of the 1920s." University of California at Irvine.

King, Stephen. *Cujo*. Viking. 8 Sep. 1981. Print.

Ledmeister. "DOOM Info." Classicdoom.com. Web. 08 Mar. 2012. <<http://classicdoom.com/doominfo.htm>>

Lockaby, Eric. "How You Got Videogames Wrong: It's All Interactive." Nightmare Mode. 3 Nov. 2011. Web. 08 Mar. 2012. <<http://nightmaremode.net/2011/11/gaming-in-the-dark-13092/>>

McElroy, Justin. "Joystiq interview: Blow unravels Braid in postmortem." Joystiq. 25 Sep. 2008. Web. 08 Mar. 2012. <<http://www.joystiq.com/2008/09/25/joystiq-interview-blow-unravels-braid-in-post-mortem/>>

McLuhan, Marshall, and Eric McLuhan. *Laws of Media: The New Science*. Toronto: University of Toronto, 1988. Print.

Murray, Janet. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. Cambridge, MA: MIT Press, 1998. Print.

Parkin, Simon. "Gamasutra - Features - Jonathan Blow: The Path to Braid." Gamasutra. 12 Sept. 2008. Web. 3 Mar. 2012.
<http://www.gamasutra.com/view/feature/3786/jonathan_blow_the_path_to_braid.php?print=1>.

Pearce, Celia. "A Game Theory of Game." *First Person: New Media as Story, Performance and Game*. Wardrip-Fruin, Noah and Pat Harrigan. MIT Press, 2004.

Pearce, Celia. "Spatial Literacy: Reading (and Writing) Game Space." LCC website. Oct 07 2008 Web. 29 Mar. 2012.
<http://lcc.gatech.edu/~cpearce3/PearcePubs/Pearce_FROG_FINAL.pdf >

Pearce, Celia. *Communities of Play: Emergent Cultures in Multiplayer Games and Virtual Worlds*. Cambridge, MA: MIT, 2009. Print.

Rabinowitz, Peter J. *Before Reading: Narrative Conventions and the Politics of Interpretation*. Ithaca: Cornell UP, 1987. Print.

Salen, Katie, and Eric Zimmerman. *Rules of Play: Game Design Fundamentals*. Cambridge, MA: MIT, 2003. Print.

Schleiner, Anne-Marie. "Dissolving the Magic Circle of Play: Lessons from Situationist Gaming." Opensourcery.net. 2010. Web. 22 Mar. 2012.
<<http://www.opensourcery.net/Dissolving.pdf>>

Squire, Kurt. "Video-game Literacy: A Literacy of Expertise." University of Wisconsin Madison Website, Tenure Files. 13 June. 2007. Web. 21 Mar. 2012.
< <http://website.education.wisc.edu/kdsquire/tenure-files/04-video-game%20literacy.pdf>>

Thomsen, Michael. "Geek, Dork, Nerd - Spoiled Rotten." The Escapist. 5 Oct. 2010. Web. 08 Mar. 2012. <http://www.escapistmagazine.com/articles/view/issues/issue_274/8173-Spoiled-Rotten>

Totilo, Stephen. "MTV Multiplayer - A Higher Standard." Multiplayerblog.mtv.com. 8 Aug. 2007. Web. 8 Mar. 2012.
<<http://multiplayerblog.mtv.com/2007/08/08/a-higher-standard-game-designer-jonathan-blow-challenges-super-marios-gold-coins-unethical-mmo-design-and-everything-else-you-may-hold-dear-about-video-games/>>

Woodford, Darryl. "Abandoning the Magic Circle." Dpwoodford.net. 2007. Web. 22 Mar. 2012.
<<http://www.dpwoodford.net/Papers/MCSeminar.pdf>>

Zimmerman, Eric. "Gamasutra Features - Jerked Around by the Magic Circle - Clearing the Air Ten Years Later." Gamasutra. 07 Feb. 2012. Web. 08 Mar. 2012.
<http://www.gamasutra.com/view/feature/135063/jerked_around_by_the_magic_circle_.php?print=1>

Zubek, R., Hunicke, R., and LeBlanc, M. "MDA: A Formal Approach to Game Design and Game Research." Web. 08 Mar. 2012. <www.cs.northwestern.edu/~hunicke/MDA.pdf>